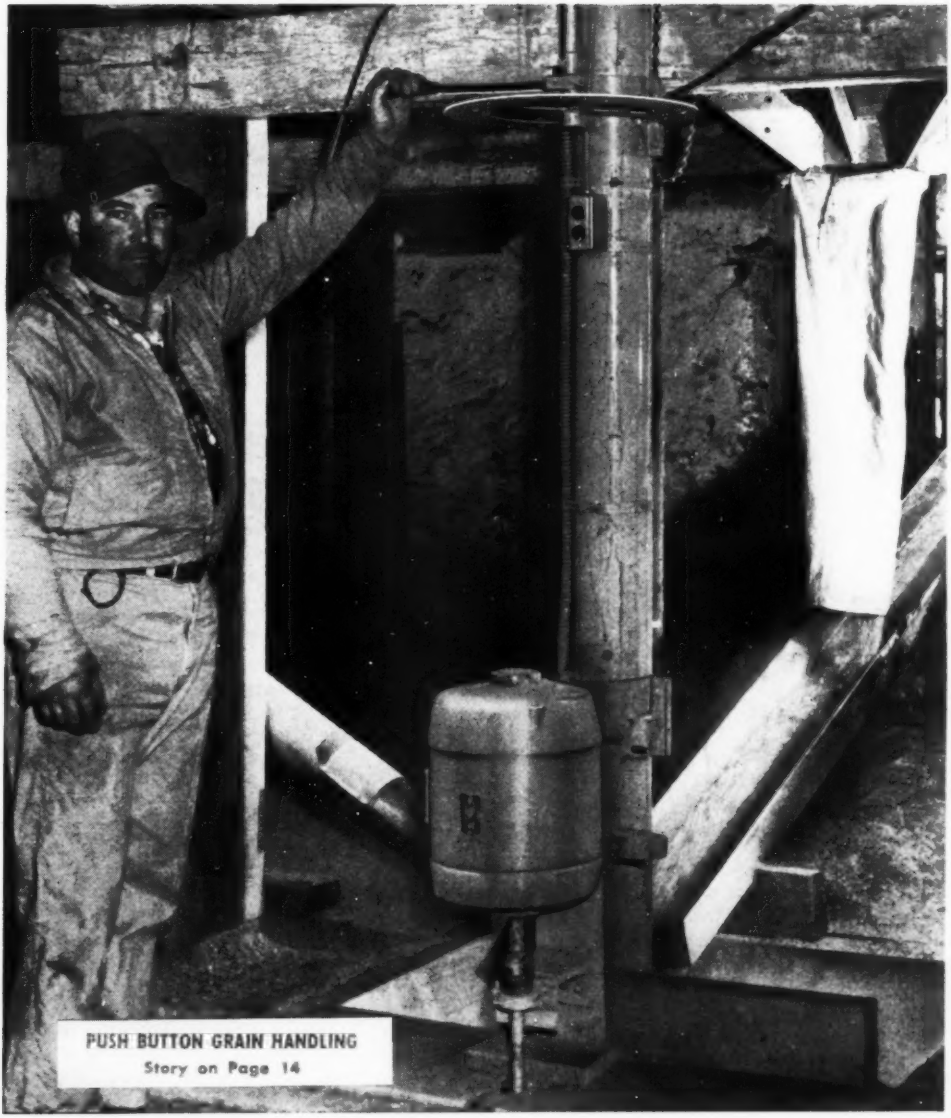
# ELECTRICITY ON THE FARM *Magazine*

**FEBRUARY, 1956**

**Good Wiring Key to Efficiency**
**Major Appliance News for '56**
**Cattle Conveyor-Cafeteria . . .**
**Heated Corner Nest Saves Pigs**
**Ventilate for Dairy Cow Health**



**PUSH BUTTON GRAIN HANDLING**
Story on Page 14

OUR 29th YEAR—THIS ISSUE 784,000 COPIES

# See what DORMEYER does for your kitchen this year!

## *2 Big and Beautiful All-Chrome Appliances*

### DORMEYER'S GREAT NEW SILVER-CHEF

First all-chrome mixer on the market and the only mixer that comes with a meat and vegetable grinder at no extra cost! Triple-plate chrome with 2 lifetime stainless steel bowls . . . 2 chrome-nickel beaters . . . new bowl-size selector, 10 full powered speeds . . . head dismounts for portable mixing. Complete with grinder. **Model 4300.** Just . . . $55.95

Factory-guaranteed by Dormeyer

### DORMEYER'S WONDERFUL FRENCH-FRY SKILLET

It pan fries and French fries! Makes superb casseroles without heating up your oven. It's a perfect Dutch oven—even a popcorn popper! Lets you cook wherever there's an electric outlet and have better tasting foods because its heating element is an electric range type unit. There's a cooking-frying guide on the handle, a temperature control guide, "jewel" signal light. Extra-big: 11" across, 3" deep. And only Dormeyer includes cover and French fry basket at one price. **Model 6400.** Just..... $19.95

S
S
D
A
P

F
F
A
E
V

# Editor's Chat

## EDITORIAL CHANGES

We are making significant changes in our editorial staff that we feel will allow us to provide you with even better editorial coverage. In recognition of his outstanding performance as Associate Editor we are advancing Hugh J. Hansen to the position of Editor. Elinor Casavecchia is replacing Edna Weston Kestel as Home Editor.

Your Editor is succeeding Fred Shepperd as Editorial Director. Fred has served the magazine editorially ever since it was founded back in 1927. He will continue in an advisory capacity from his farm in the West.

Hugh Hansen came to us from Purdue University where he was Assistant Professor of Agricultural Engineering. A Minnesotan by birth, Hugh spent his youth on a grain and cattle farm in North Dakota. He is a graduate of North Dakota Agricultural College in Agricultural Engineering. Immediately following graduation, he worked with USDA in farm electrification research in North Dakota and Minnesota.

Hugh obtained a Master's Degree in Agricultural Engineering from Cornell University while studying under a research fellowship sponsored by the New York Farm Electrification Council. From Cornell he went to Purdue University to continue research work sponsored by the electric utilities and cooperatives of Indiana. Hugh is an active member of the American Society of Agricultural Engineers and the American Society for Engineering Education.

Elinor Casavecchia joins our staff as Home Editor with an extensive background in Home Economics coupled with a thorough knowledge of household equipment. Elinor is a graduate Home Economist from the University of Massachusetts. She was formerly associated with a major appliance manufacturer as a Home Economist. Prior to this affiliation, Elinor was Assistant Home Service Director with a leading western utility. This combined experience gives her a practical knowledge of electrical equipment and its place in the modern farm home. She is an active member of the American Home Economics Association and the Electrical Women's Round Table.

Electric power has unlimited use on the farm and in the farm home. It is truly the leading source of energy for modern equipment. Keeping you fully informed at all times is our primary aim. We are confident these editorial changes will help us do that. Incidentally, may we remind you again that letters are welcome if you have a question regarding electrical equipment and its use.

## BOUNTIFUL AIR

The air we breathe, the water we drink and the sunshine that all may enjoy more or less depending on weather, luck and location, are blessings we too often fail to appreciate. Like love and some other things, because they are free or practically so, we underrate their worth. Air is one of these things. There is plenty of it. It's easy to push around or confine as the need may dictate, and it can do a lot of useful work. Confined, it makes the modern automobile tire a practical possibility and can drive jack-hammers, drills, paint sprayers and many other tools. It supports airplanes, drives windmills and makes it possible to fly a kite—if that appeals to you.

Air can also be used to carry excess moisture and some of the natural fragrance out of a cow stable or chicken house, if that happens to be a problem with you. In a kitchen, if properly controlled, it can make working conditions more pleasant for the cook, even if it also carries off some of the more tempting fragrance of the food. Taking it altogether, AIR is pretty good stuff and very useful. Make the best possible use of your share.

Jim Ridout

**Subscription rates:** $1.00 per year; $2.00 for 3 years; $3.00 for 5 years. 10c per copy. Bulk rates on request. Accepted as controlled circulation publication at Dayton, Ohio.

**ELECTRICITY ON THE FARM** *Magazine*

FEBRUARY, 1956—VOL. 29, NO. 2

Copyrighted 1956 by the Reuben H. Donnelley Corp. Not to be reprinted without permission.

I. HERBERT CASE, *General Manager* W. J. RIDOUT, JR., *Editorial Director* KARL M. MANN, *Advertising Director*

HUGH J. HANSEN, *Editor.* ELINOR CASAVECCHIA, *Home Editor.* KARL H. GORHAM, *Business Manager.*

Published monthly except combination issues June-July and Aug.-Sept. by Case-Shepperd-Mann Dept., Business Papers Division, The Reuben H. Donnelley Corp., 305 East 45th St., New York 17, N. Y., Gaylord Donnelley, Chairman of the Board; David L. Harrington, President and Chairman of the Executive Committee; Curtiss E. Frank, Executive Vice-President and General Counsel; Albert M. Andersen, Executive Vice-President; Harold P. Harper, Donald R. Arnold, Hamilton B. Mitchell, Giles B. McCollum, Vice-Presidents; Edward A. O'Rorke, Assistant Vice-President; Harry W. Warner, Secretary and Treasurer; Karl G. Clement, Controller; Edward B. Wintersteen, Executive Manager, Business Papers Division. CHICAGO: 8 So. Dearborn St.; LOS ANGELES: 6000 Miramonte Blvd.

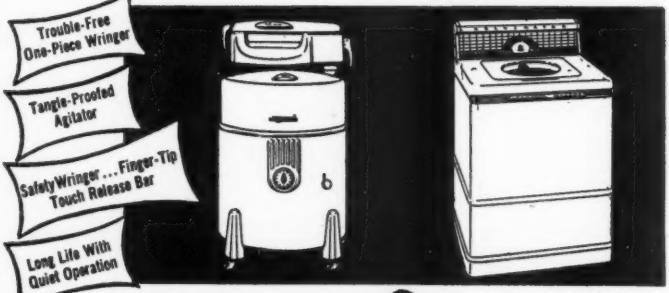
**POSTMASTER:** Send changes of address (Form 3579) to Electricity on the Farm, 305 E. 45th St., New York 17, N. Y.

# NOW KELVINATOR GIVES YOU ALL-WEATHER DRYING AT A LOW, LOW PRICE!

**THE ONLY CLOTHES DRYER WITH ALL 3 SAFETY FEATURES**

1. **Safe Low Temperature**
   Fast-fluffy drying safe for finest fabrics!
2. **Safe Cylinder**
   Smooth cylinder—no sharp edges—saves wear, tear and snagging!
3. **Safety Door**
   Dryer stops automatically when door is opened! Add or remove clothes any time.

**KELVINATOR HAS A COMPLETE LINE OF STANDARD AND DELUXE WRINGER WASHERS, SEMI-AUTOMATIC AND AUTOMATIC WASHERS TO FIT ANY NEED—PRICED TO FIT ANY BUDGET!**


Trouble-Free One-Piece Wringer
Tangle-Proofed Agitator
SafetyWringer ... Finger-Tip Touch Release Bar
Long Life With Quiet Operation

★ ★ ★

**Kelvinator's Automatic Washers Have Exclusive 3-Way Agitator To Get Clothes Really Clean!**

1. *Circulator Action*
2. *Shampoo Action*
3. *Water-Jet Action*

**Kelvinator**

Division of American Motors Corp., Detroit 32, Michigan

American Motors Means More for Americans

# Good Wiring Key to Efficiency

## Unsatisfactory Equipment Operation Indicated Need for Additional Capacity

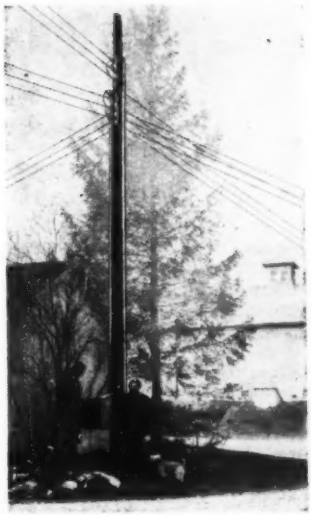
By MALCOLM SERGEANT

Mrs. Helen C. Bell, owner-operator of the Echo Hill Farm, Wallkill, New York, is the third generation of her family to operate the 250 acre combination dairy and fruit farm located in the beautiful Wallkill Valley. A combination of good, well-drained soil on slopes providing good drainage has resulted in better than average yields and minimum frost damage over the years. These natural advantages have been supplemented by a program of pruning, spraying and handling methods intended to produce a quality product of the 25,000-30,000 bushels each year. As Mrs. Bell says, "Repeat business is good business and a quality product means repeat orders."

The apples ordinarily provide the greatest income but the dairy business is not neglected. In order to provide year round work for the full time men on the farm and to stabilize the somewhat fluctuating income from the apples, the dairy business was expanded. A herd of 60 registered Holsteins is now an important part of the farm business. All replacement animals are raised on the farm with artificial breeding used exclusively. One of the first hay driers to be installed in the Hudson Valley was placed in operation on this farm in 1943. In 1953 a 300 gallon bulk milk cooler was installed and in 1954 a barn cleaner with a 3 hp motor was put to work. When this electrically operated equipment was added to the electric system that was already operating—sorting, grading and nailing equipment in fruit packing sheds and the electric range, automatic washer, clothes dryer and water heater in the house—troubles began to develop. Some equipment had to be turned off to permit other equipment to operate. Lights dimmed noticeably when motors were in operation. The electric range took longer than it should to heat up.

To correct these conditions the service entrance was placed on a meter pole that was installed at a central point. A meter cabinet and a 200 ampere main disconnect switch were installed on the pole.

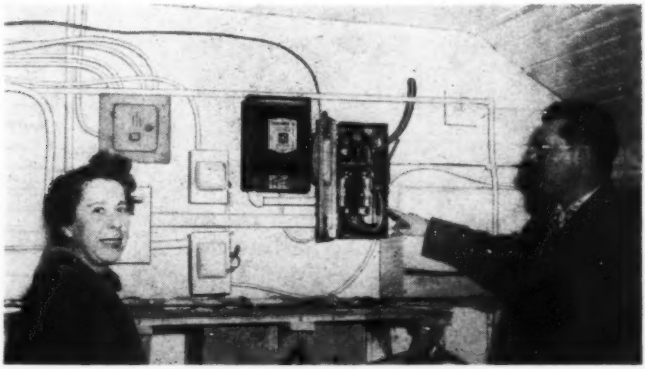
Separate feeder circuits were run from the pole to the residence, dairy barn, fruit packing sheds and storage buildings. At the residence the old 60 ampere service entrance was replaced by a 100 ampere switch panel served by a #2 service entrance cable. Additional circuits of #12 wire were added in order to provide more convenience outlets for operating all the electric appliances now used in the home. Each major appliance operates on its own individual circuit for safety and for efficient operation.



Meter pole on Echo Hill Farm showing 200 ampere main disconnect switch in cabinet.

In the dairy barn another 100 ampere switch and #2 cable were installed. In addition, each motor of ½ hp or larger size was placed on a separate 230 volt circuit. Now the lights remain bright and the motors come up to full operating speed very quickly.

Mrs. Bell is quite pleased with the changes brought about by the new electric wiring system. The 30 or more electric motors on her farm operate equipment costing more than $13,000. The motors range in size from a tiny clock motor to a 3 hp motor on the barn cleaner and the $650 it cost to rewire the farm is a good investment in Mrs. Bell's opinion. Efficient operation is essential to the success of any farm operation today and good wiring is an important key to this efficiency.



Electric service for dairy barn consists of 100 ampere main switch and separate circuits for motors on bulk milk cooler, hay drier, and barn cleaner.

# Heated Corner Nest Saves Pigs

## Individual Farrowing Pens Protect Against Cold and Trampling to Minimize Losses

By FRED SCHLETER

Saving those purebred Hampshire pigs puts dollars in the pocket of Irving R. Schneider, who operates a purebred Hampshire farm near Seymour, Indiana. Irving has used various methods of supplying heat while farrowing and brooding his winter and spring litters. He is now using a new method that is proving very successful. He has had practically no loss of pigs, due to laying on or trampling by the sow. Last spring, 154 pigs nursed 16 sows and gilts, an average of 9.6 pigs per dam.

### Individual Farrowing Houses

The reason for this saving is the farrowing method earnestly practiced by Schneider. He uses 6 ft. by 7 ft. individual farrowing houses with hinged roofs for easy attending of the sow. These houses are pulled together inside of an enclosed shelter (formerly a poultry house) with several houses in one area. The large shelter gives extra protection to the individual houses as well as the operator in tending the litters while confined. This latter benefit really paid off during two weeks of near zero weather last winter.

The sliding door to the corner nest can be opened or closed without disturbing the sow by means of this wire handle which extends to the outside of the house.

### Infrared Lamps Heat Nests

Each house is equipped with guard rail and boarded corner nest for piglets. One 250 watt infrared lamp is hung 24 to 30 inches above the floor. As warmer conditions occur, he changes to lower wattage lamps. His electric load builds up to as many as 15 to 20 infrared lamps at one time. With such farrowing quarters, adequate temperature (above 45°) is maintained for the sow and the operator does not need to use lamps over the sow.

A removable guard, 12 in. high, is placed in the spacing at the bottom of the stationary guard when pen is readied for the sow. This inserted guard has a small 6 in. by 24 in. metal sliding door which may be closed or opened by control wire to outside of house. As farrowing develops, the attendant easily moves the newborn pig to the heated nest, continuing the process until sow is through farrowing and completely rested and quiet. By pulling the control wire and opening the door (an almost silent operation) the piglets have free run to the sow. This method does not radically change conditions of the pigs or sow at any time such as taking the pigs away to warmth and returning them to sow. Schneider designed his own sliding door guard.

The closing off process continues from three to five days as the sows are taken out of individual quarters twice each day to a feed lot outside of the shelter for feeding and one hour of exercise. When the sow has returned and quieted down, the pigs are released to her. This presents considerable more work and care than utilized by the general farm hog operation. The extra effort applied insures better records and savings in this purebred enterprise. After five days the 12 inch removable gate guard is removed.

Schneider's experience certainly illustrates the value of supplementary heat and corner nests for newborn pigs as insurance against pig losses from chilling or trampling by the sow.

The corner nest, heated by an infrared lamp, provides both heat and protection for pigs. During farrowing, the sliding door is closed to keep piglets in nest and away from sow.

# Cattle Conveyor-Cafeteria

## Silo Unloader and Mechanized Bunk Saves Five Hours Labor Per Day in Feeding 190 Steers

By H. H. MARSHALL
and
F. O. AYRES

The saving of five hours a day in feeding 190 steers is the result of thoughtful planning and mechanization on the Roberts Brothers farm, Hopkins, Michigan. They started in the summer of 1954 by having a 20 ft. by 90 ft. silo erected in a wooded section of their 180 acre general farm. This silo holds between 600 and 700 tons of corn ensilage. A 160 ft. feed bunk was constructed, one end being under the silo chute and running out into the feed lot.

An automatic 5 hp electric silo unloader deposits the silage on a conveyor in the feed bunk powered by a 3 hp electric motor. As the silage comes down, grain is shoveled on at the rate of 17 pounds per animal per day. Two pounds of protein supplement with Stilbestrol is added. The feed bunk is completely filled in a thirty minute period.

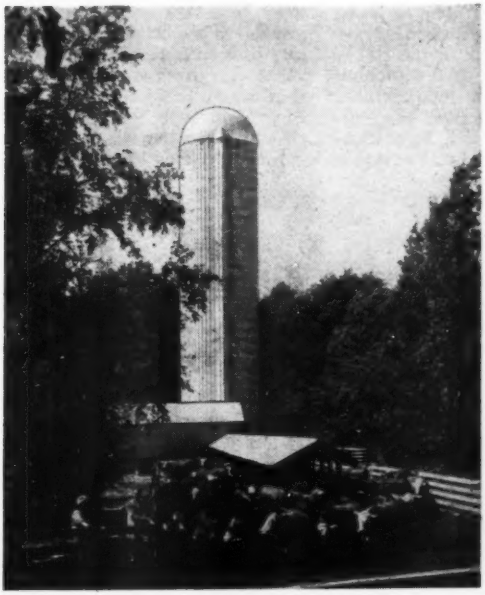
The only shelter provided for the cattle is protection from wind by the trees surrounding the lot. There was some concern as to how the steers would withstand the cold days of winter but there seemed to be no discomfort and a gain of 2 pounds per day per animal is estimated.

Other features which make this operation a success is the paved fenced-in 100 ft. by 200 ft. lot. Sawdust is used for bedding and the area is cleaned very easily with a manure loader and spreader.

Western cattle weighing about 600 pounds per head were bought in November. They will be sold at about 1,200 pounds. Fifty hogs run behind the steers to utilize the corn.

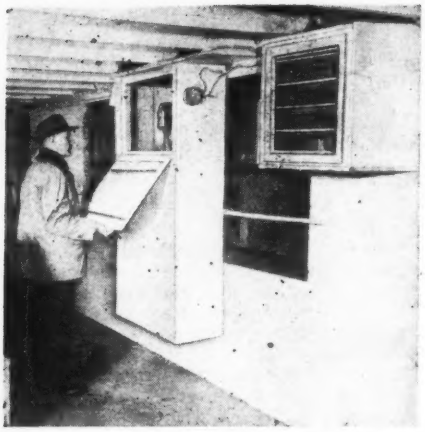
An automatic water system and a corn elevator complete the electrical uses made at this location. Electrical consumption for the first seven months of operation averaged 10 KWHr per day during this period.

The Roberts believe that their beef feeding operation setup as it is without artificial shelter saves about one-third of the investment cost. The use of electricity to get the feed to the steers at a monthly operating cost of about $11.00 also eliminates the need for hired help to do the sometimes hazardous and always hard work of forking silage out of the silo into a feed bunk.



The Roberts Brothers use a 20 ft. by 90 ft. silo with unloader and a 160 ft. feed bunk to feed their 190 steers. All forking of silage is eliminated.

The 5 hp electric silo unloader deposits silage onto this conveyor feed bunk. A 3 hp motor on conveyor distributes silage to cattle lined up along the 160 ft. bunk.



Two fans ventilate the Nixon barn. Fan on left (in duct) runs continuously and takes air from floor level to conserve heat. Fan on right is controlled by a thermostat and runs when stable is over 50°F.

# VENTILATE for Dairy Cow Health

## Planned Systems Reduce Stable Bronchitis by Providing Healthier, Drier Surroundings

By MORRIS H. LLOYD

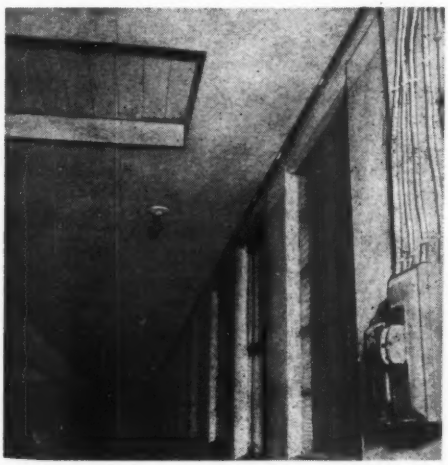
A number of farmers in Livingston County, New York, have found that electric dairy barn ventilation reduces building repair bills, improves the health of the animals, eliminates drafts and keeps the stable dry. Experiences of the following three farmers are typical of what properly designed and planned systems can mean to a dairyman.

### *Two Fan System*

During the winter of 1951-52, Wallace Nixon of Caledonia, New York, had eighteen cases of stable bronchitis in his dairy herd. His veterinary suggested that the best preventative would be ventilation of the stable. He tried to ventilate by adjusting the windows, but this made conditions worse. He then called in the farm service representative of his power supplier, who designed a simple, effective ventilating system following the recommendations of the New York State College of Agriculture.

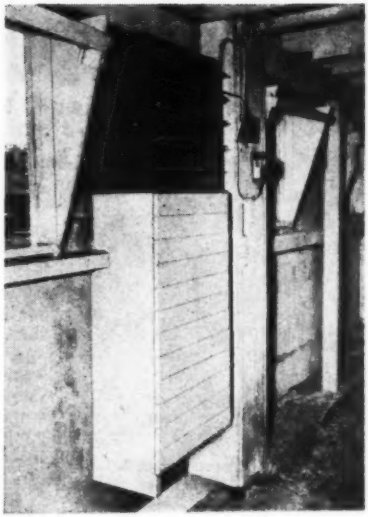
The system consists of an intake slot along both walls of the stable, which allows cool, dry air to move down from the hay mow along the face of the stable wall. This helps to keep the walls dry and prevents drafts, since the incoming air is spread into a thin "sheet". Two fans are used, located side by side near the middle of the wall away from the prevailing wind. The smaller fan exhausts approximately 30 cubic feet of air per minute (cfm) per 1,000 pounds of livestock. It draws the air from floor level through a wooden duct. This duct permits the fan to draw the cooler air from floor level, thus conserving heat during cold weather, while providing a continuous supply of fresh air. The capacity of the fan is so matched to the weight of livestock in the stable that it can be run continuously through winter temperatures common to the region. The second fan is controlled by a thermostat and runs when the stable temperature rises above 50°F. It moves about 70 cfm per 1,000 pounds of livestock. Thus, on warmer days it is possible to step up the flow of fresh air into the stable, keep the temperature comfortable and prevent the humidity of the air from becoming too high. This fan has a set of shutters which close when the fan stops. The shutters are mounted inside the stable. This makes it easy to keep them clean, and prevents ice from freezing them shut when the fan stops. It is easy to remove the shutters to oil and clean the fan.

Since Nixon's ventilating sys-



Air is brought in from hay mow through this one-inch slot along the ceiling edge of the Stapley barn. The "sheet" of air falling along the face of the stable walls helps to keep walls dry.

tem has been in operation, the health of his dairy herd is much better. Not one case of stable bronchitis has developed since he installed ventilation and the saving in veterinary expense has paid for the installation.



The Koch installation features a single speed, two volume fan. The automatic shutters are controlled thermostatically. When open, as shown here, the fan takes full capacity from ceiling. When stable temperatures fall below 50°F., the shutters are closed by thermostat, and about 40% of an capacity is drawn through duct from floor level.

### Bored Hole and Slot Intakes

Harold Stapley of Avon, New York, decided to remodel and widen his dairy barn two years ago to enlarge his herd and increase the efficiency of his stable arrangement. Stapley also asked his power supplier's farm service representative for assistance in planning for ventilation. The design which resulted called for an installation similar to Nixon's. The slot-type intake was installed over the new wall on the south side of the barn. A 2" x 4" board laid on edge on the mow floor in front of the 1" slot keeps hay and chaff from falling into the opening. On the north stable wall, which was under the older part of the barn, 1¼" holes were bored up through the mow floor instead of cutting in a slot.

The fan arrangement and method of operation are similar to that in the Nixon barn, but with one difference. The fans are placed in the hay mow, in a box with a lid which can be removed when cleaning and oiling is necessary. This method of installation was used because the wall was made of stone and is banked with earth.

Stapley is well-pleased with the results of this ventilating system. Fresh, cool air enters the stable under control and is supplied uniformly to all parts of the stable. Odors have been eliminated and the stable has a dry comfortable atmosphere which is better both for the animals and for men who work in it.

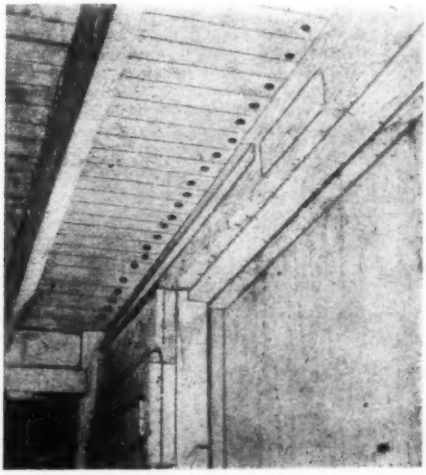
### Single Fan System

Albert Koch of York, New York, had a moisture problem in his stable. Walls were damp. A new door had started to warp and new electric service switches and fuse panels began to rust. Something had to be done quickly. The intake system installed here consists of 1" holes bored up into the mow floor, to direct air down along the face of the stable walls. Holes are provided along both walls except within two feet of the fan, with twenty-five 1" holes for each 1,000 pounds of livestock.

A single fan near the center of the east wall runs continuously. It is known as a single-speed, two-volume fan. Shutters on the inside of the fan housing are opened and closed by a furnace damper motor. When the stable temperature rises above 50°F., the thermostat causes the damper motor to open the shutters. The fan then pulls its full capacity from the ceiling level, and it exhausts about 100 to 120 cfm per 1,000 pounds of livestock. When the stable temperature falls below 50°F., the shutters close and the fan draws from 30 to 40 cfm per 1,000 pounds of livestock from floor level. This conserves heat, helps to keep an even temperature in the stable, yet continues to supply some fresh air at all times.

Koch found that the ventilating system produced results very quickly. Walls, doors and ceiling are dry and drops of moisture no longer collect on the metal parts of the wiring. His dairy barn will now last a lot longer as a result of his investing in dairy stable ventilation.

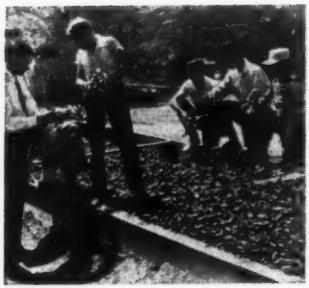
The experiences of these three dairymen are typical of the results that can be expected of a well-designed dairy stable ventilating system. They have found it to be a mighty good investment.



In the Koch stable, air intakes were provided by boring one-inch holes along the hay mow floor perimeter.

# Electric Hotbeds Boost Production

## Properly Built and Managed Units Protect Tender Plants



The FFA class of Handley High School, Roanoke, Ala., uses a hotbed as an annual educational and financial class project. The 6 ft by 30 ft bed has four 400 watt electric heating cables. About March 15th, the class plants 20 bushels of certified potatoes. Four weeks later 80,000 potato slips are ready for sale. Last year the class grossed $450. Hotbed materials cost $55; potato seed, $60; and electricity $35; leaving a net of $300.

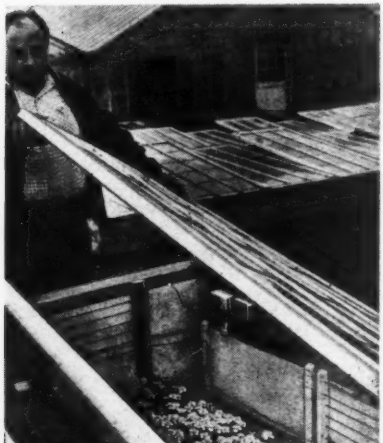
There are basically two types of heating cable available for hotbeds. One type is covered with a lead sheath for protection. The other type uses a plastic insulation. Both types have a nickel-chromium heating wire. The wattage per foot for these wires varies depending upon type and brand. Most of the cables are designed for 115 volt service in sizes up to about 400 watts and for 230 volt service in higher wattage ratings.

For general hotbed installations, about 10 watts per square foot of hotbed area is recommended. The cable should be spaced to provide this amount of heat. The spacing will vary depending upon the cable rating in watts per foot of cable. Burial of cable is usually made about 6 inches below the soil surface for most plants. A depth of 4 inches is better for sweet potatoes.

Hotbed temperatures are regulated in two ways. Excessive daytime heat from the sun is relieved by lifting the sash a couple of inches. The heat supplied by the heating cable is controlled with a thermostat. The thermostat is set for the temperature desired. The thermostat sensing bulb is usually placed in the soil just below the surface.

Frames and sash should be tight to exclude wind and save heat. If a hotbed is built and managed properly, the sun will furnish most of the heat with electricity pinch-hitting at night to maintain an even temperature round the clock.

A North Carolina Ag Engineer shows details of installing electrical wiring and thermostat in a hotbed. He is using cable purchased in bulk and hooks 60 ft of cable across a 115 volt circuit. He says a 6 ft by 15 ft hotbed should last 10 to 15 years. Total cost is about $45. North Carolina farmers have produced as many as 3,000 sweet potato plants per bushel of seed put in the hotbed. The plants produced in these hotbeds are strong and healthy with a good root system. They withstand transplanting very well.

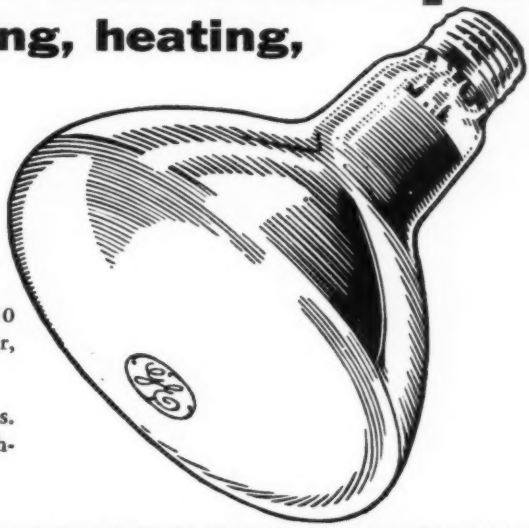


Sam Picardo of Kent, Wash., uses hotbeds to grow Marigolds and tomatoes. He plants them in individual flats so they can be picked up for market as needed. Since he could not insert the cable in the soil, he distributed it at a 1½ inch spacing on cleats with 7 turns around the inside of the hotbed (shown at left). Each of his 6 ft by 60 ft hotbeds (below) is supplied with 2570 watts of heating capacity. This is controlled with thermostats set at 35°F. Last year the beds protected plants when temperatures fell to 13°F.

# G-E Infrared Lamps

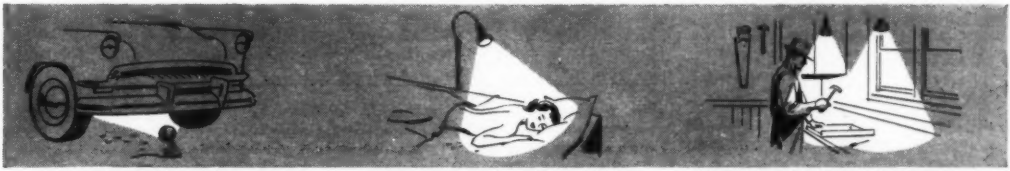
## for dozens of drying, heating, brooding uses

*Save work, time, money on the farm, in the home*

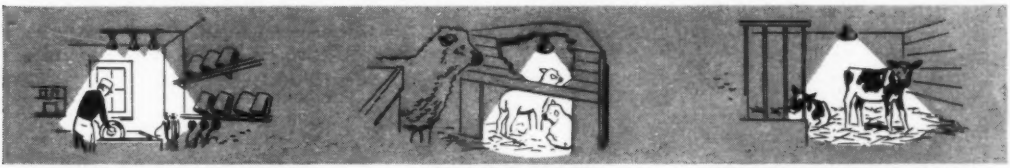


**G-E HARDGLASS INFRARED LAMP.** 250 watts. Resists breakage from splashing water, built-in filter reduces glare. $2.95.

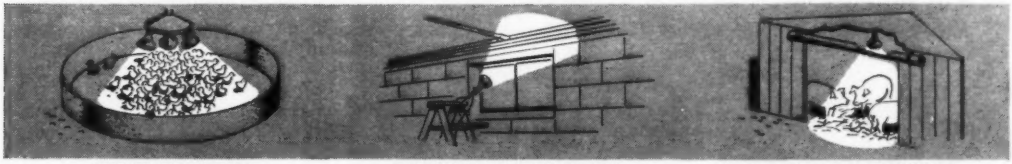
**G-E STANDARD INFRARED LAMP.** 250 watts. For use where there is no danger of splashing water on bulb. $1.10.



COLD MOTOR STARTS EASIER | HEAT FOR MUSCULAR ACHES | COMFORT AT THE WORKBENCH



COMFORT IN THE MILK HOUSE | HEAT FOR LAMBS | WARMING NEWBORN CALVES



CHICK BROODING | THAWING FROZEN PIPES | HEAT FOR PIG BROODING

*New applications for G-E Infrared Lamps are reported almost every day.*
*What unusual uses have you made of these versatile farm lamps?*

**FREE BOOKLET**

*Illustrated booklet shows many uses for G-E Infrared bulbs on farm and in home. Write to General Electric, Large Lamp Dept. EF-2, Nela Park, Cleveland 12, O.*

*Progress Is Our Most Important Product*

GENERAL ELECTRIC

# All About Electric Motors—Part II

## Selecting an Electric Motor for Farm Application According to Special Physical Features

By ROBERT H. BROWN

Thus far in the selection of a motor the decisions have resulted in a choice of type and size and the first part of a "typical order" would read "A ½ hp capacitor-start motor." The remaining decisions concern the third job of a motor—to withstand the "abuse" of its surroundings—and the factors to be considered are: enclosure, base, bearings, and overload protection.

### Enclosures

For farm use a selection of enclosure is made from the **open-drip proof**, the **splash proof**, or the **totally-enclosed** type. These enclosures are shown in Figure 4. The open-drip proof is most common, and is the least expensive. It is used when the surrounding conditions are relatively free of dirt, dust, lint and water. In general, if the conditions do not bother the operator of the equipment they will not bother the motor. The splash proof enclosure costs about 15% more than the drip proof and is especially adapted for equipment that must be washed down regularly. The water will not enter the motor unless it comes up from the base which is not the usual case. The totally enclosed housing has too often been overlooked in farm motor selection. It is about 30% higher in initial cost than the drip proof, but it affords the maximum protection for the motor. In dusty or damp locations, it will add years of life and in the long run may be the cheapest.

### Bases

The two usual styles of motor bases are shown in Figures 5 and 6. The **rigid base** is most common and is the least expensive. It is well suited for most farm jobs since the small adjustment provided by the slotted holes in the base can be utilized to adjust belt tension in all but the very special cass. The **cushion or resilient base** is the choice to make if the motor is to be mounted on a piece of material that vibrates. Sometimes the mount can be steadied but quite often it is unsteady due to the nature of the equipment operation as is the case of the frame of an auger elevator. In such instances the best thing to do is to employ a cushion type base for the motor. The cushion base is used primarily with the smaller (1 hp and less) motors, but it is available for motor sizes up to 3 hp.

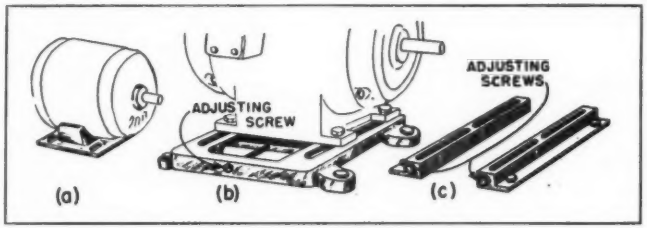



Fig. 5. Rigid type motor bases. On fractional hp motors, the base is usually mounted on the motor as in (a). For larger motors, the rigid base is cast as part of the motor frame (b) and motor adjustment can be made with the use of either a slotted base attachment as shown in (b) or with sliding rails as in (c).

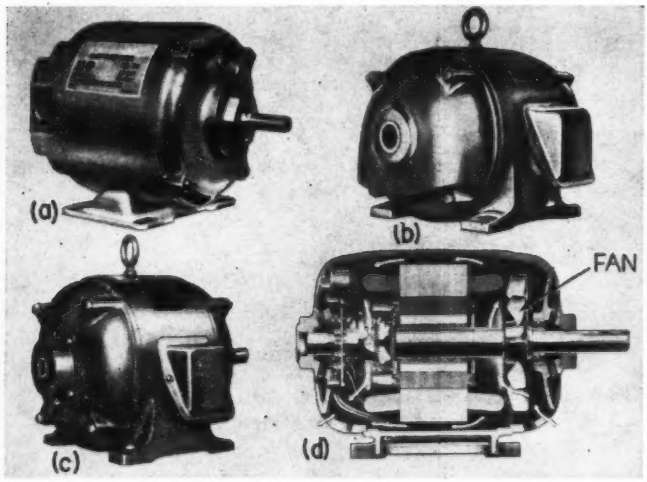



Fig. 4. The most common types of motor enclosures are (a) the open drip proof type, (b) the splash proof enclosure used mostly to prevent liquids from splashing into the motor, and (c) the totally-enclosed motor used where there is considerable dust and dirt. The movement of cooling air through the open and splash proof types of motors is shown in (d).

### Bearings

Typical bearings for electric motors are shown in Figure 7.

Fig. 6. The cushion or resilient base shown here keeps motor noises at a minimum and protects motor from equipment that vibrates.

The **sleeve bearing** is the most common type and is a little cheaper for motors smaller than 1 hp. For larger motors the initial cost is the same for either type bearing. If the motor is to be mounted with the shaft in a horizontal position either bearing is satisfactory. When the shaft of the motor will not be horizontal, ball bearings are required. The problem of lubrication is often simplified in the case of **ball bearings** and since

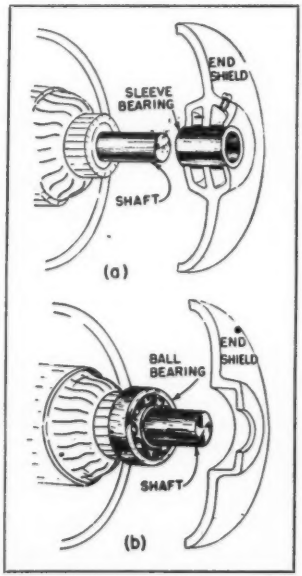
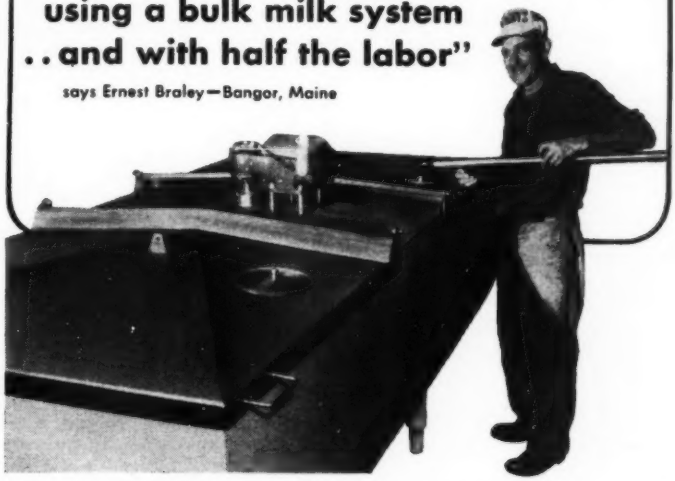



Fig. 7. Motor bearing types. The sleeve bearing (a) is commonly used on fractional hp motors. Ball bearings (b) are used on large motors and motors to be mounted other than in a horizontal position.


"I get 26¢ per cwt. more for my milk using a bulk milk system ..and with half the labor"

says Ernest Braley—Bangor, Maine



Since he installed his 500-gallon, Stainless Steel bulk milk tank two years ago, Mr. Braley has averaged 400 gallons each pick up (every other day). The tank holds the milk at 35°, and it takes only about 10 minutes to transfer the milk from tank to tanker.

Mr. Braley says, "The bulk milk system has cut our milking time in half—from about 4 man-hours to 1½ man-hours. Now, it's a one man job with 40 Holsteins. We save 10¢ per cwt. on hauling alone (25¢ vs. 15¢). Butterfat runs about two points higher, so that nets an extra 16¢ per cwt. We also save quite a bit on stickage, and bacteria count is low."

Why not talk to your dairy about the many advantages of bulk milk handling? You make more money, the dairy makes more money, and everybody saves time and effort. It's the low cost, modern way to produce milk, and tanks made from USS Stainless Steel have been proving it all over the country. Send coupon for the free booklet that answers your questions about this money-making milk handling system.

UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO • NATIONAL TUBE DIVISION, PITTSBURGH
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS STAINLESS STEEL

SHEETS • STRIP • PLATES • BARS • BILLETS • PIPE • TUBES • WIRE • SPECIAL SECTIONS

Agricultural Extension
United States Steel Corporation, Room 5077
525 William Penn Place, Pittsburgh 30, Pa.

Please send me the free booklet on bulk milk handling equipment.

Name .....

Town ..... RFD.....

County ..... State.....

6-49A

USS

UNITED STATES STEEL

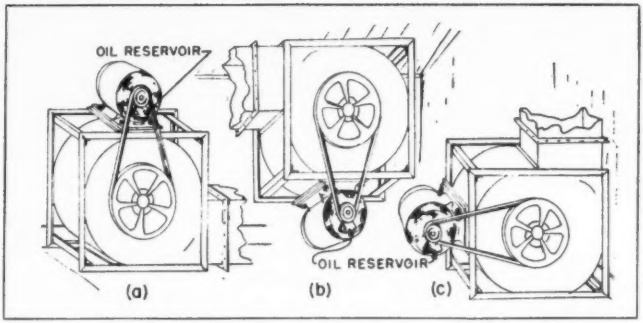



Fig. 8. A sleeve bearing motor can be mounted in any one of these three positions but the end shields must be loosened and rotated for side-wall or ceiling mounting to obtain proper lubrication.

there is no oil leakage problems the end shields do not need to be rotated when the motor is mounted in various positions. With sleeve bearings it is necessary to rotate the end shields when the motor is positioned as shown in Figure 8.

#### Overload Protection

The last decision pertaining to "withstanding the abuse of its surroundings" concerns overload protection. This protection is available as an extra feature built into the motor frame or it may be gained through the use of an outside control. The decision to make prior to ordering the motor is "Shall it have a **built in overload device** or will the overload protection be gained by selecting the proper type external control?"

A motor definitely should not be operated without some type of overload control. The motor is said to be overloaded if too much electricity flows through its windings. This excessive electricity causes the windings to get hot, melts their insulation, and the motor "burns out". In all motor applications it is possible for this to happen (unless an overload device is used) since an overload could be caused by any one of the following things:

- Connected load is too great.
- Belt is too tight or binds.
- Voltage supplied to the motor is too low.
- Pulleys are not in line.
- Driven machine becomes locked or jammed.
- Bearings get hot due to faulty lubrication.
- Motor shaft binds due to misalignment of motor end shields (caused by mount or frame bolts unequally tightened).

All of these items cannot be checked everytime so the best solution is to buy an overload (or overcurrent) device.

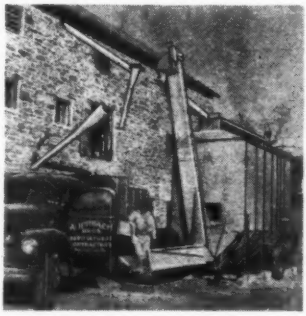
The built-in overload works on the principle that excessive heat can be made to trip a mechanism which will open a switch thereby stopping the motor. This action occurs automatically. The motor is started again in one of two ways. If the device is an **automatic reset type** the motor will be automatically restarted as soon as it has cooled. If the device is a **manual reset type,** the attendant must press a button which is located in one end shield of the motor. Pressing the button resets the trip mechanism and restarts the motor. This style is preferred in most cases since it gives the attendant a chance to investigate the situation in an effort to see why the motor was overloaded. Most farm motors are protected by external overload devices rather than the built-in type.

Illustrations used in this article are from the publication *"Selecting Farm Electric Motors, Controls, and Drives"* issued by the Southern Association of Agricultural Engineers and Vocational Agriculture, Barrow Hall, Athens, Georgia.

# Push Button Grain Handling

The Auerbach Bros.—Martin and John—of Doylestown, Pennsylvania do a lot of farming. In addition they buy and sell grain. All of which means there is a lot of work to be done and both Martin and John know that to get it done, they must do it mechanically. For them, the days of the shovel are over.

The grain handling program on the Auerbach farm consists of a continuous flow drier, a 5 hp auger conveyor and six overhead bins of 30 tons each located in a typical Pennsylvania bank barn. Bins are of sturdy construction with steel bottoms for thorough self emptying.



Grain is emptied from truck into feeder and elevated into the continuous flow drier which can handle 150 bushels of 25% moisture grain per hour.

The auger, as shown on our cover, is used to move grain into or out of the bins. This auger, which is capable of moving 660 bushels of grain per hour, is set in a pit in the driveway floor. All six bins can be emptied by gravity into the pit. The auger reaches up into the peak of the barn and will discharge into any of the six bins or into a truck parked outside the barn. The discharge pipe is positioned to any of these seven locations by moving the lever being adjusted by Martin on the cover picture.

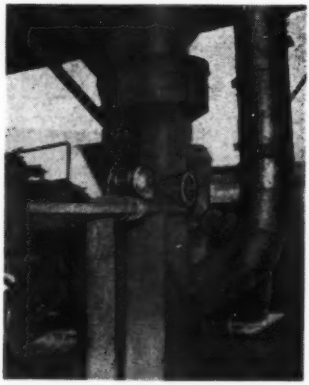
Their continuous flow drier is capable of handling 150 bushels of 25% moisture grain per hour. This grain handling system puts the Auerbach Bros. in a position to furnish their customers a cleaner, more uniform, and better grade product—all this at the press of a button.

# Fertilizer Hopper Mixes Feed

I am putting out concentrate at the rate of 600 pounds to the acre." That's what E. L. Sizemore of Gadsden, Alabama says about his feed mixer.

In November 1953, Sizemore began operating a 20 cow Grade "A" Dairy. He was using a 12" Letz Mill to crush his hay and grain. The concentrate was then hand mixed into this feed by using a scoop.

To solve this problem Sizemore mounted a fertilizer distributor hopper operated by a quarter horsepower electric motor at the side of his mill. The concentrate is fed into the return chute where the crushed feed falls out of the mill. The crushed feed and concentrate goes into the fan and is blown into the sacker. By the time it gets to the sacker it is thoroughly mixed. After a trial and error



Concentrates are fed from overhead hopper into return feed chute by the fertilizer distributor driven with a ¼ hp motor.

method Sizemore determined that the setting on the fertilizer distributor should be at the rate he would have used in putting out fertilizer at 600 pounds per acre.

This mixer was made from used equipment that Sizemore had on his farm and according to him it saves 10 hours of hard work per month.

E. E. SHELTON


**How Shuttle-Stroke Action cuts barn cleaning costs**

**EASIER TO INSTALL.** Fits any gutter length, any barn or stall setup.
**CHEAPER TO OPERATE.** Fewer parts in gutter where corrosion is greatest.
**CLEANS BETTER.** Scrapers mix liquids with solids. Less waste.

# New Jamesway Cleaner only $33.52 a month, 2 years to pay

**Cleans out manure for 4¢ a ton**
**Installs easier, cleans better, lasts longer**

A REASONABLE down payment puts a Jamesway Shuttle-Stroke cleaner to work for you right now! And you have two years to pay . . . while it pays for itself. Here's how:

You can handle more cows — cheaper, easier. Produce more milk with the same labor. Save 200-400 hours of chore time every year.

The Jamesway Shuttle-Stroke cleaner is easier to install; cheaper to maintain. Fits any barn or stall arrangement . . . cleans better . . . does a million pounds of lifting every year for just 4¢ a ton.

See this Power Choring Shuttle-Stroke cleaner along with the complete line of Jamesway hog, poultry and barn equipment at your Jamesway dealer's now. For his name or further information write the JAMES MFG. CO., Dept.EF-26,c/o your nearest branch office.

Power Ventilation

Silo Unloader

Cattle Feeder

Jamesway

Ft. Atkinson, Wis. Lancaster, Pa.
Los Angeles 63, Calif.

FIRST IN POWER CHORING

# Infrared Heat Improves Germination

## Wyoming Researcher Uses Heat Treatment of Hard Alfalfa Seed to Increase Percentage of Quick Germinating Kernels

By CLARENCE M. RINCKER

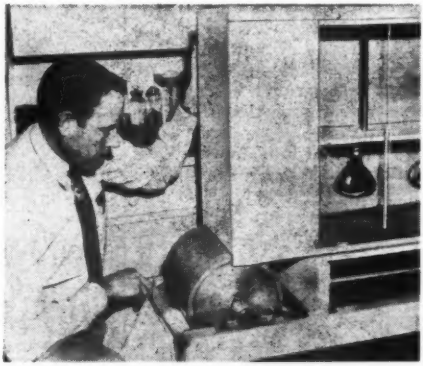
Northern-grown alfalfa seed frequently exhibits a rather high percentage of hard seed when subjected to germination tests. This is especially true when the seed is tested soon after harvesting. High percentages of hard seed in sweet clover seed has for years been a problem. However, in alfalfa it is a different story. Hard seed in alfalfa has often proven to be beneficial. Nevertheless, in recent years an increasing number of farmers have been showing a prejudice against it when purchasing seed.

Scarification of alfalfa seed will decrease the percentage of hard seed. However, it often damages the seed and shortens the viability of it. In an endeavor to accomplish the same effect without damaging the seed, experiments were started at the University of Wyoming in 1948 using heat treatments. It was found that by using the proper time-temperature relationship that heat treatments would reduce the percentage of hard seed while not affecting the total percentage of germination. Further, the seed so treated could be stored over 1½ years and had no loss of viability and retained the benefits of the treatment.

In these experiments, one of the methods used to supply the heat was by exposing the seed to radiation from infrared heat lamps. This method looked so promising that it was decided to use it in an endeavor to make a semi-commercial machine.

A machine was designed and constructed in which a thin layer of alfalfa seed was fed onto an endless rubber belt to be transported underneath a battery of infrared heat lamps and then discharged into a sacking device. The lamps were installed in a closed chamber to retain the maximum amount of heat. The original model contained 8 lamps of 250 watts each. It has now been modified to use 14 lamps of 250 watts each. This was done to increase the heating capacity of the machine.

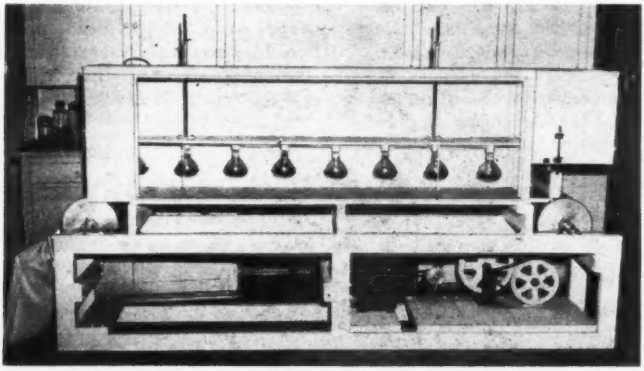
The endless rubber belt is 12 inches wide and is driven by an electric motor with variable speed controls to enable proper time adjustments on the heat treatment. Temperatures of 280°F. can now be obtained within the heating chamber. The endless rubber belt is exposed for approximately seven feet within the chamber.



Treated seed comes off the belt into a sack. The treatment reduced the percentage of hard seed from 48% to 21% without damaging any seed.

The last comprehensive test conducted with the machine was with only 8 infrared lamps in use. In this test, ten different lots of Wyoming seed were treated. Before treatment, these ten lots average 48% hard seed and 41% quick germination for a total of 89%. After treatment, the same ten lots were retested and averaged 21% hard seed and 68% quick germination for a total of 89%. Thus, the hard seed had been reduced significantly without affecting the total germination percentage.

Wyoming alfalfa seed producers are enthusiastic over the performance of the heat treating machine. Further work is being done to make the device practical on a commercial basis. When this becomes a reality, it will be a definite break for Northern alfalfa seed growers.



Over-all view of heat treating machine. The seed is carried from right to left on the 12 inch rubber belt under the bank of infrared lamps.

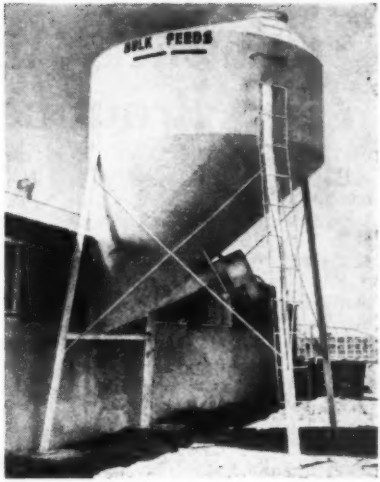
# Auger Conveyor Moves Bulk Feed

Lawrence Mitchell and Manual Goulart of Visalia, California have a 42 stanchion milking barn where 115 cows are milked twice daily. Getting feed for these 115 cows into a delivery wheelbarrow from an outside storage bin is easy since they mechanized the operation. They just push a button and the feed flows from bin to delivery unit. An electrically powered auger does the work.

Discharge end of auger conveyor inside dairy barn. Cleaver type door is used to prevent spillage.

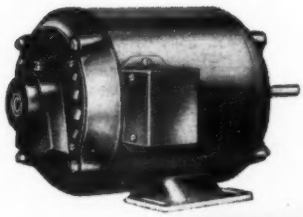
The bulk bin stands alongside the building and holds seven ton of concentrates. Its bottom is sloped toward the building wall and a spout extends to the inside through the wall. Set in the bottom of the bin and into the spout is a 7 ft. long, 8 in. diameter auger, driven by a 2 hp motor that is mounted at the outer end of the auger.

The end of the spout has a cleaver-like lift door. When the delivery unit is under the spout the door is lifted, and a button on the wall is pushed. This starts the motor and feed is augered from the bin into the delivery unit.




The bulk feed storage tank is located outside dairy barn. Note electrically driven auger conveyor built into bottom of tank.

Switch to "Farm-Tested" Power with Century REPLACEMENT MOTORS . . .



BUILT TO FIT YOUR EQUIPMENT

There's no need for delay or inconvenience when your pump, blower, grinder or any other equipment needs a new motor. Replace with a Century "farm-tested" motor. These motors are precision built to the exact sizes and standards to fit your farm and household equipment.

Ask your local electrical dealer about Century "farm-tested" motors. If he doesn't have the motor you need, show him this ad and ask him to write us immediately.

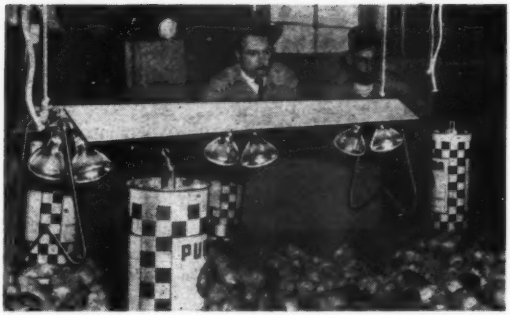
Performance-Rated© Motors ⅛ to 400 H.P.

CENTURY ELECTRIC COMPANY

1806 Pine St. • St. Louis 3, Mo. • Offices and Stock Points in Principal Cities

26

# Kilowatts Aid Egg Producer



Hicks installed ten of these infrared brooder units. Each unit has six 250 watt lamps suspended 18 inches above the litter.

Howard Hicks, Talladego, Ala., converted a large, well ventilated idle building into a brooder house. From the beginning Hicks was interested in using the latest and most profitable methods of raising his flock, and in order to get a good start he installed ten 500 capacity infrared brooders to brood his first batch of 5000 chicks. Each brooder consisted of six 250 watt infrared heat lamps arranged in pairs on a "V" shaped sheet metal frame. The lamps, spaced 30 inches apart, were suspended so that the surface of the lamps was 18 inches from the litter. Each brooder was thermostatically controlled so that half of the lamps would be automatically turned off at the desired temperatures.

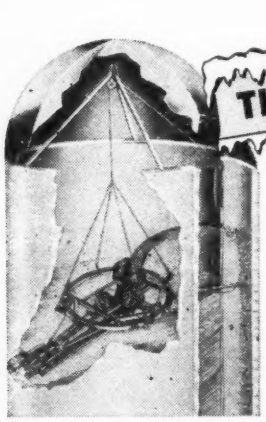
Of the original 5000 sexed baby chicks purchased, Mr. Hicks placed 4,500 layers in cages at the age of 4½ months. He has increased his flock until he now has 7000 laying hens and a replacement group of 800 coming on. A total of 380-15 watt bulbs in his laying house, turned on and off by time clocks, has assisted in the control of molt in his flock and has kept egg production at a high level. Each lamp covers an area of 25 square feet and the rows of lamps are over the aisles so as to give maximum lighting intensity over the feed troughs.

Recently Hicks has added an electric powered feed grinder and mixer to his operation. Although these two pieces of equipment have not been in operation very long, he is saving $1.20 per hundred pounds of feed which means an increased income to his operation. The 7000 layers and 800 replacements consume approximately 2000 pounds of feed daily.

Here are two of the time clock controls used to turn lights on and off in the laying house. Chickens are provided 12 to 14 hours of light daily to keep production at a high level.

Eggs are gathered twice daily (3 times in hot weather) and immediately transferred to an egg cooling room where the temperature is maintained at 35 to 40 degrees F. Eggs are removed from the cooling room daily, graded electrically and delivered immediately to business establishments in Talladega in attractive cartons. Each carton is designed to do a selling job, bearing his name, sales slogan and date imprinted in large blue letters.

J. R. EDWARDS

THIS WINTER . . .

**Feed ALL YOUR SILAGE with a PATZ Silo Unloader**

- A Power Driven Edge Cutter "hugs" the silo wall and "chews free" the hardest frozen grass or corn silage.
- A High Speed Power Driven Frost Chipper "pulverizes" frozen and frosted silage *before* delivering it to the gathering chain.

No need to feed frozen chunks, or musty, dried out, unpalatable ensilage for weeks after a heavy freeze. You can *feed all of your silage, all winter long* and save hundreds of man hours of work . . . with a PATZ Silo Unloader.

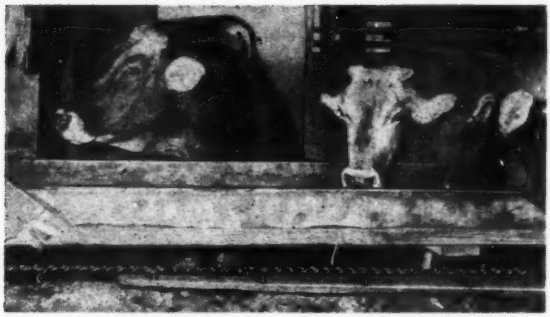
**EASILY TRANSFERRED TO SECOND SILOS**

The PATZ Silo Unloader is suspended from a tripod inside the silo. Additional tripods for additional silos allow the unloader to be dismantled and assembled to operate in second and third silos.

For additional information, write

Patz Barn Cleaners can be installed throughout the winter. For complete information on an easily installed Barn Cleaner, write

**THE PATZ COMPANY** POUND, WISCONSIN



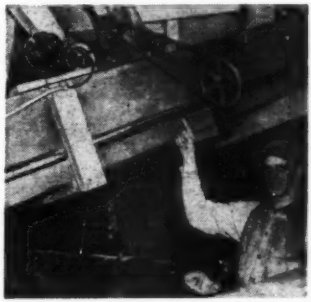
The "automat" feed trough extends across end of loose housing dairy barn. The trough is 18 inches wide and 80 ft. long. It utilizes an endless chain conveyor driven by a ¾ hp wagon unloader unit.

# "Automat" for Loose Housing

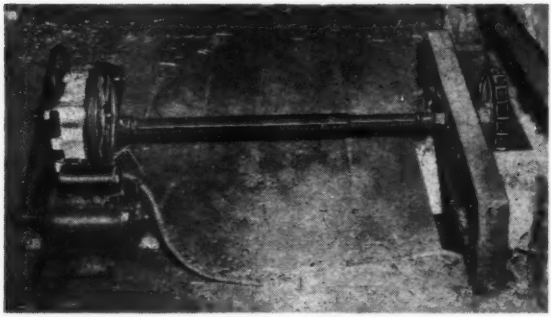
Compared to three hours, William Hicks, of Tyrone, Pennsylvania, now feeds his cows their silage in only 15 minutes a day. In conjunction with his silo unloader, he has installed an elevator and conveyor, controlled by a time clock, that delivers the silage "cafeteria" style. This system, which saves Hicks 2 hours and 45 minutes daily, cost him only $250 plus his silo unloader.

Upon delivery of the silage by the unloader to the base of the silo, it is picked up by a short elevator, which drops it through a chute, onto one end of an 80 foot feeding trough. The silage is carried along the feeding trough by an endless chain conveyor. The elevator is operated with a ¼ hp motor.

The "brain" of Hick's automatic feeding system is a time-clock. It is set to run 15 minutes each time it starts the mechanism. This is just long enough to carry the silage to the far end of the 80 foot trough.



This short inclined elevator with ¼ hp motor carries silage from silo unloader chute to feed trough.



Close-up view of wagon unloader unit which serves as a power unit for operating the endless chain conveyor in feed trough. A gear ratio is used which moves the conveyor at a speed of 5 ft. per minute.

**The new dual-purpose Dempster Convert-o-jetmaster water system** allows you to change from shallow-well to deep well (down 90 ft.) operation at little cost—*regardless of most water conditions.* Long-life, stuffing box filters out abrasive particles. Removable bronze sleeve stops wear on motor shaft for added years of trouble-free service. Choice of powerful ½ H. P. or thrifty ⅓ H. P. motor. Delivers up to 835 gals. per hour.

- Better seal—friction free, more pumping power
- Cost-free conversion—all is furnished except pipe.

See your Dempster Dealer or write

**DEMPSTER MILL MFG. CO.**
600 South 6th St Beatrice, Nebraska

**Guaranteed for 2 Years**

Can take a beating and keep on heating. Keeps water running even at 50° below. Shockproof, waterproof, fireproof, SAFE. Easy to use: wrap around pipe, secure with tape, plug in. Lengths from 3′ to 60′. Priced from $2.45. Best Buy!

***WRITE FOR FREE CATALOG***
Listing 35 Electrical Aids

**SMITH-GATES CORP.**
Dept. B-1 • Plainville, Conn.

# Major Appliance News for '56

## New Household Equipment Offers Gracious Living

Color predominates in the 1956 line of appliances. Women who are potential buyers of new equipment have become more color conscious. To them it is a means of expression, comparable to music and poetry. To meet this interest manufacturers are adding new colors to their lines. On the whole they are quiet, pleasant pastels that are easy to live with and can be blended. Pink is still the most popular.

With the advent of color in kitchen appliances this room is now being considered as a unit. To give it the feeling of oneness, matching and blending paints, wall cabinets, tiles, linoleums, and accessories are available.

Generally speaking, this is the year for a face lifting in appliances. Few manufacturers have made drastic changes, but there are many minor innovations.

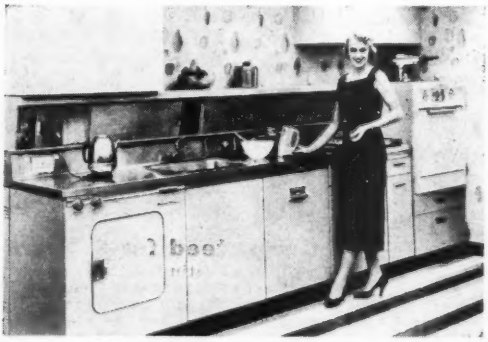
### Kitchen Units

The complete kitchen unit which made its appearance last year as an 8 foot unit with combination washer-dryer, range, dishwasher, sink and disposal, is now also available as a 9 foot 2 inch and 10 foot unit. It has been made more flexible with interchangeable storage cabinets for the undercounter combination washer-dryer and oven. Additions to this unit include back drop storage cabinets, built-in radio, cord center with retractable cords, and a separate oven mounted on a special counter cabinet—thus making a two oven unit, if desired. To make it a complete kitchen a wall refrigerator is suggested as additional equipment.

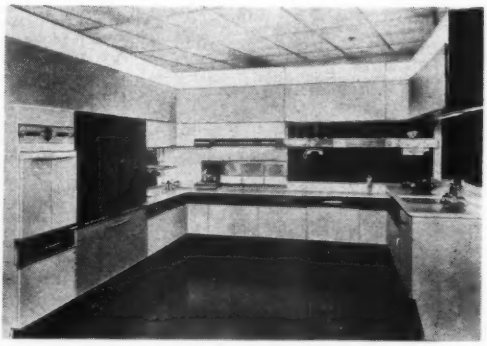
Along the same line, tomorrow's kitchen makes its appearance today. This is an entire kitchen made up of integrated units. It is free standing with its own walls, lighting, wiring, plumbing, and exhaust facilities. It comes in two foot multiples to be mounted on studs adapting it to a kitchen of any size or shape. These units may be installed to form a complete kitchen or a start can be made with selected basic units to be added to as desired.

French double doors, first appearing on built-in-models, are now available on 30-inch conventional ranges.

This year's new kitchen features a waist-high refrigerator, drawer type freezer, recessed surface units, French door wall oven,



Many new features are offered in this 1956 kitchen center. A convenient storage cabinet, equipped with a built-in-radio, rests on top of the backsplasher and runs the full length of the unit. A cord center with two retractable cords and a waist-high oven add to the center's usefulness.



"Tomorrow's kitchen" has a French door wall oven (left) equipped with a device that dissipates smoke. Next to the oven is a 10½ cu. ft. refrigerator. A 6 cu. ft. drawer-type freezer is located below. Four handy fold-back surface units (rear) provide extra counter area when not in use.

built-in dishwasher, disposal, hand free telephone, intercom, built-in radio, pull-out vanity, and memo pad.

It has been predicted that these units are only the beginning in the future trend of considering the kitchen as a unit. This is all in the plan to make it easier to provide maximum benefits in kitchen equipment and arrangement for building and remodeling.

## Ranges

As is true with all pieces of equipment the electric range is designed for ease of use and freedom from drudgery. It is a joy to prepare a meal on ranges that are available today.

Automatic cooking is the key to most ranges. More of the surface units have automatic temperature controls and some are even connected to the timer. Guesswork cooking has been eliminated from the top-of-the-range just as it was previously from the oven. One range has a griddle that fits over two units. It is plugged into a back outlet which connects both units to an automatic temperature control, thus providing even cooking. Other plug-in griddles are also available. Speed is another asset of most surface units.

Oven watching is eliminated in this electric range. An automatic meat thermometer turns off the oven and signals when the roast is done.

A miracle filter has been installed in an oven vent of one manufacturer's top-of-the-line ranges to provide smokeless, fume-free ovens. It is a catalytic device which operates when the oven is turned on.

Oven shelves are now being placed on heat tempered ball bearings for easier usage. French double doors that first appeared on a built-in model are now available in a 30 inch conventional. As the doors are opened the bottom shelf rolls out. Disposable aluminum foil linings now appear on the bottoms as well as on the sides of ovens of one make of range.

An added accessory is the meat thermometer for testing roasts. It made its appearance last year and now will be found on several models. The thermometer is inserted in the meat and the other end of its cord is plugged into a special outlet on the side of the oven. A lighted dial on the top of one range tells the internal temperature of the meat. Another type is automatic which turns off the oven when the roast reaches a predetermined temperature.

The electric rotisserie is available as an extra attachment with some built-in and some conventional models. It operates automatically when the oven is on.

## Built-ins

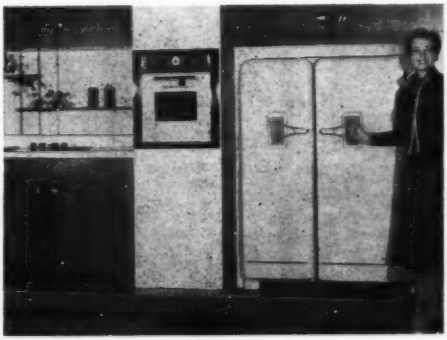
Built-ins have been on the market for some time and have been well accepted. The trend toward more built-ins is a contribution to well organized kitchens for both convenience and appearance. Practically all of the manufacturers offer built-in oven and cooking surface units, and others are showing built-in dishwashers, washers, dryers, refrigerators, freezers and combination units. These are available in colors and stainless steel. The news with these units is the improvement for easier, faster installation by the use of flexible cable and simpler fastenings.

A five pound beef roast takes only 30 minutes to cook on this electronic range. Oven walls and utensils remain cool to the touch, eliminating need of pot holders.

## Electronic Range

Perhaps the biggest news in new equipment for the home is the electronic range. One is now available and another in the testing stage. This type of cooking, done by microwaves which produce heat only in the food, is going to revolutionize our whole concept of food preparation. Temperature controls have been eliminated on the available model which has the appearance and size of a built-in oven. It utilizes only a timer, a low and high speed setting for the microwave unit, and controls for the browning unit. The latter is a high speed unit for browning steaks and chops which wouldn't brown in their short cooking period.

Cooking time has been reduced from ½ to 1/10, with a potato baking in four minutes, an egg cooking in 20 seconds and a 5 lb.



The trend seems to be toward larger refrigerator-freezer combinations, as shown here in this 16 cu. ft. model. Freezer and refrigerator sections are placed side by side.

roast done in 30 minutes. As the only heat is in the food the oven walls and dishes remain cool. This unit, which may be used as a built-in or stacked on a cabinet, does about 90% of the cooking formerly done in the oven and on the surface. Consequently at the present time there is need for another range to do the other 10% of food preparation.

The cost (over $1000) and lack of trained personnel to instruct the homemaker in its use, limits its availability to the average person today. But this is only the beginning for a new method of cooking for home use (it has been available for some time commercially) and we can expect to see many developments.

This combination freezer-refrigerator has a full sized refrigerator above and a 9.3 cu. ft. freezer below. Doors, each 12 inches in depth, provide easy access to all storage space. The entire unit occupies little more floor space than a conventional refrigerator of comparable size. Each shelf in freezer is a quick freezing shelf.

## Refrigerators and Freezers

To insure safety for any child crawling into a refrigerator, at least one state has already passed a law requiring that it must be possible to open refrigerators from the inside. To comply with this law, one manufacturer has provided magnetic door plates and another an inside release.

Flexible storage arrangement to provide optimum use of these valuable food keepers is one of the features highlighted this year. It is surprising the amount of readily usable storage space available in these new models.

For the person who has difficulty in removing ice cubes there is the ice ejector, a built-in feature of one refrigerator. By sliding the tray into the device, ice cubes are automatically released into a storage bin which holds them until needed.

One manufacturer is showing refrigerators without any freezer space to provide maximum cold storage and to be used in combination with a freezer.

There are more and more refrigerator-freezer combinations with freezer units located top or bottom to satisfy personal needs and preferences. Side by side units are also available.

## Dishwashers and Water Heaters

Few changes have been made in these appliances. An under-counter dishwasher offers a wide choice of front panels to correspond with kitchen decoration, and a portable has a counter-balanced lid equipped with a pull handle. Water heaters feature faster recovery, which means more usable hot water for dishwasher, laundry, and bathroom needs.

## Washers and Dryers

Controls are more flexible in the laundry equipment field permitting the homemaker a wider choice to fit fabrics, amount of laundry, etc. Specialized laundering has gone beyond the wash cycle in some automatic washers and combinations. The flexibility of dial controls with two different speeds makes it possible to wash, rinse, and spin dry small loads of clothes or miracle fibers in less time with less soap and water. One unit has a cycle that can be accomplished in as little as 12 minutes.

A new color feature of one laundry manufacturer is a changing of colors on the top of the units by a change of fluorescent

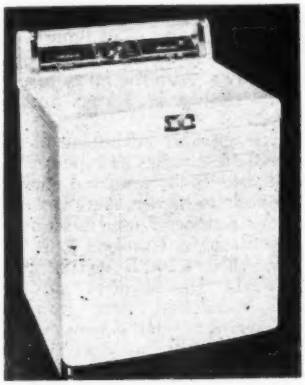
**Above:** This refrigerator features magnetic doors with foot pedal instead of conventional mechanical latch. A child trapped inside could easily push it open. **Right:** Used in pairs, this combination features an automatic defrosting refrigerator with no freezer compartment. All freezing space is provided in matching freezer.

Modern, easy-to-load automatic washers with their new flexible controls make it easy for the homemaker to perform her family tasks whenever convenient, even dressed in her best.

light tubes. A choice of six colors is available and these can be changed in two minutes. The color may be changed to fit the person's mood.

Dryers also have more flexibility on time and heat controls. Some have controls that can be set to fit type of fabric, size of load, and water content. A few may be used without heat for fluffing clothes. An added feature of one model is an air freshener located in the air intake to provide the outdoor smell for the clothes.

More of the automatics have kits available to make them portable. Thus women in homes not having facilities for permanent installation or living in rented homes need not do without these great labor savers.

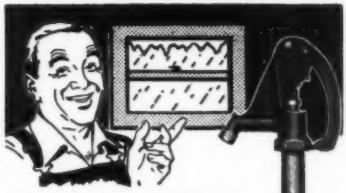


Electric dryers have more flexible time and heat controls. Some have controls that can be set to fit type of fabric, size of load and water content.

Manufacturers are providing the homemaker today with the opportunity of enjoying gracious living surrounded by beautiful appliances and equipment designed and manufactured to give her dependable results with a minimum of effort on her part.

### Wrapping Meat for Freezer

For freezing, always package foods which are to be layered (hamburgers, for instance) with two thicknesses of moisture-vaporproof material between the layers, so they may be separated easily when taken out of the freezer.

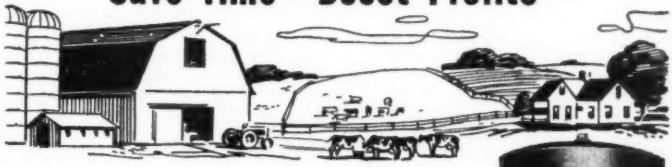
**"Columbiana Hydrants Provide Water With No Freezing Problem!"**

- Install in barn, hen house, garage, or any place water is needed!
- Drains after use! Can't freeze!
- New-type valve needs no adjustments!
- Packing gland adjusts with ¾" open-end wrench!
- Spout threaded for standard garden hose!
- Drain tapped for ⅛" tube!
- Has hook for pail!

See your plumbing, water systems or hardware dealer . . . or write us direct!

THE COLUMBIANA PUMP CO.
RAILROAD ST. • COLUMBIANA, O.
*Established in 1888*

**Save Time—Boost Profits—**



**Own a Deming Water System!**

Look at a dependable Deming Water System from a *profit-making* point of view. Then you think of it as a *work-saving machine.* Day or night, year after year, a Deming Water System can help you make more profit per dollar of investment than any other type of farm equipment. Why skimp on water when FULL, PROFITABLE USE OF IT costs so little more? Write for FREE literature on the COMPLETE Deming line of pumps and water systems.

THE DEMING CO., 504 Broadway, Salem, Ohio

MADE BETTER FOR YOUR PROFIT
DEMING
LONG SERVICE WATER SYSTEMS

After school Margaret and Eleanor sort out some personal items for the automatic.

# No More Washday Blues!

## Automatic with Push Button Operation Makes Washing a Joy for Farm Family

Everyday is washday now and it's a joy with my new automatic washer. Its push-button ease of operation, efficient cleansing power, economical use of hot water, and the resultant immaculate sweet smelling laundry add up to the greatest work saver I own.

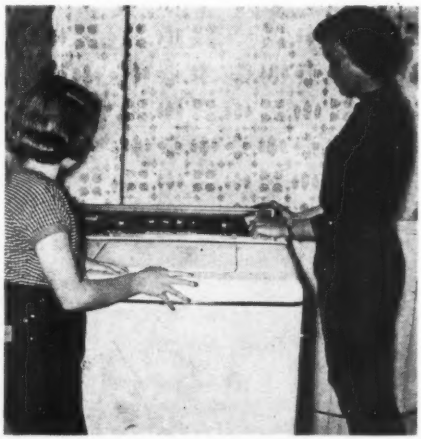
For fifteen years I postponed the purchase of this automatic because, like many other farm women, I believed it would require more water than our dug well could supply. However, new models on the market today use less water. Our new machine features a five way choice, including four wash variations. It offers a regular wash, a fine fabrics wash, and a soak cycle with the two wash periods operated at either full or part load capacities. The saving of water with the part load selector amounts to eleven gallons over previous models. Then again, because very hot water is necessary only in the regular wash cycle, we can save as much as five and a half gallons of hot water on the fine fabrics and soak cycle.

With five children in the family our new machine is put to maximum use. Of course a new baby in our home made it the answer to this mother's prayer. Every day my infant son's wash adds up to a part load of fine fabrics. Because tiny baby clothing is not heavily soiled, I find the fine fabrics cycle's minimum of agitation coupled with warm soapy water just right. Therefore, it saves on hot water as well as unnecessary wear and tear on these dainty duds.

Like every other typical active rural family we have our share of soiled clothing and linens. About every other day the tub is filled with a regular wash of these soiled items. And on alternate days there's enough of the more delicate pieces to make up either a part or a full load of fine fabrics. My teen-age and sub teen-age daughters and myself can gather together enough nylons, orlons, dacrons, and woolens to make up a part load of fine fabrics any day with such things as undies, blouses, sweaters, crinolines, and white school sox especially.

As I say, everyday is washday for two reasons. First of all, we have plenty of clothes to wash. Our school youngsters are not the spectator type. They participate in everything from falling in the mud to climbing rosin-soaked trees. Believe me their denims and corduroys get dirty. Secondly washing every day stretches our water supply. I'm afraid if I attempted to do a whole week's wash in one day, I'd drain the well dry. Our faithful well has always served us adequately, but there have been occasions when it was pumped dry. So using a certain amount of water everyday gives the well a chance to replenish itself. This method has been working out fine, the supply has never been overdrawn. Also the inventory of clean clothes is always up-to-date.

The greatest advantage of an automatic, besides its superb performance, is the time and energy it saves the homemaker. Up until this summer I used a wringer type machine. I pushed it to the sink, filled it with water, then endlessly (it seemed) pushed each individual piece through the wringer, after they were rinsed I had to push each piece again through the wringer. This method of washing took several hours of my time, several times a week. Although the machine did the heavy work it still was tiresome. Besides a weekly wash was sent out to the laundry, and some hand wash done each day. Now such a weekly routine is a thing of the past.



Several times a week the dial is set for a special wash of delicate fabrics.

When we purchased our automatic, I planned to continue doing some hand washing of valuable extra-care things. I soon discovered that with a

Wash is done. While Margaret did her homework the clothes were thoroughly washed, rinsed and spun almost dry.

gentle detergent, warm water and only a few minutes of agitation, this machine could do as good a job as done by hand. A good feature is the ability to shorten or even lengthen the wash cycles, making it possible to successfully launder such things as delicate curtains, blankets, and just everything that is washable.

Of interest, and certainly undisputed proof of the pleasure of its use, is the fact that my daughters plead to do the wash. Its push-button easiness appeals to them. After the wash is done, they still have enough energy left to help with the ironing, especially the flat pieces that go through the mangle. These electrical helpers make housework child's play.

MARY E. MARTIN
Baltic, Conn.

# Pillsbury Bake-Off

On December 12, 1955, the grand ballroom of the Waldorf Astoria was converted into the world's largest kitchen. One hundred electric ranges, in a variety of colors, crowned the plush carpets of this famous hotel. The cause of all this excitement was Pillsbury's annual baking contest.

In addition to cash prizes awarded by Pillsbury, each of the 100 contestants received a new electric range and mixer.

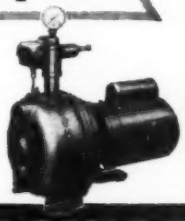
Mrs. Henry Jorgensen of Portland, Oregon, was the lucky lady who won first prize of $25,000, in addition to an electric range and mixer. Second prize of $7,500 went to Mrs. Claude Hughes of Orange, Virginia, for a Brazil Nut Cake. Third prize of $2,500 was awarded to Mrs. Nicholas Suciu of Otter Park, Michigan, for her "Apple Dimplings." The top teen-age award of $3,000 went to 13-year-old Karen Folkmier of Battle Creek, Michigan, for her "Pieburgers."

Each of the 100 contestants baked their favorite recipes four times in the electric range assigned to them. An interesting observation is that the total cost of electricity for the whole contest was only $8.75!

Mrs. Henry Jorgensen, with the Ring-a-Lings which won her first prize of $25,000 in Pillsbury's 7th Grand National Recipe and Baking Contest. She was judged from among 80 senior finalists who, along with 20 junior finalists, competed for more than $100,000 in prizes.


You MIGHT get along without a TELEPHONE

... but your family deserves the finest water system!



Be sure you get a GOULDS water system

The best "buy" you can make in a water system is the *best* water system you can buy! So be sure to see your Goulds Dealer when you want *dependable* running water for your farm or home. He has the experience—and the *correct* Goulds Pump—to help you achieve a perfect water system.

**There's a dependable Goulds for you . . .**

No matter what type of pump you may need, your Goulds Dealer has it—including the amazing Balanced-Flow, the *only* complete water system that needs *no tank!* He'll also show you a full range of Tank-Mounted Systems, Jet-O-Matics, Jet Systems and Submersibles — every one the finest pump of its type — backed by the world's largest manufacturer of pumps exclusively.

Get this *Free Booklet*

20-page pump booklet . . . tells how to select the correct water system. Read this illustrated booklet before you buy *any* pump.

**GOULDS pumps, inc.**

**Dept. E-256, Seneca Falls, N.Y.**

**DON'T RISK INFECTION FROM RAW MILK**

**Wonderful NEW *Esco* QWIK-WAY**

**HOME PASTEURIZER**

- Pasteurizes in 15 minutes
- Completely automatic
- Fully guaranteed

Same principle used in commercial dairies. Preserves full natural flavor and sweetness of milk. Sanitary milk container removable for quick cooling, storing in refrigerator. Aluminum and stainless steel construction; compact, lightweight, easy to clean. No moving parts, no timer to set.

1 gal. size

At your dealer's, or write for free folder.

**$28.95**

Full 5 qt. capacity

**ELECTRONIC SPECIALTIES CO., INC.**

1 Island Avenue, Batavia, Illinois.



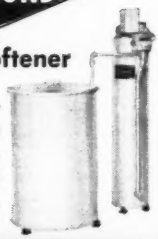
**Flip a Switch**

***Regenerate automatically***

**with the new**

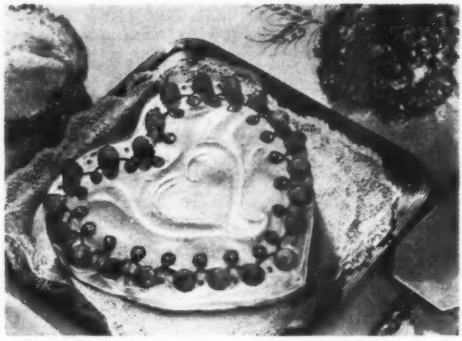
**DIAMOND**

**Water Softener**



Automatically backwashes, salts, rinses and returns to service. Manual regeneration models also available. Write.

**Oshkosh Filter and Softener Co.**
Oshkosh, Wisconsin

# February Treats

**Bake Special Desserts to Fit Each Holiday**

February is a month of holidays and festivities with Valentine's Day and Lincoln's and Washington's Birthday. These three holidays call for parties and party foods. Whether you're having a group in for a party or just the family dinner you'll want to give them something special. And what better treat is there than a special dessert that just fits the occasion.

For Valentine's Day with its traditional remembrances of hearts and flowers let's add a cake in the shape of a heart. Bake this cake in a square pan and when cool cut with a sharp knife in shape of a heart, using a cardboard pattern. Or bake in heart shaped pan filling it half full of batter. Pink frosting, red spice drops, and dribbles of milk chocolate trim your Valentine treat.

**Chocolate Valentine Treat**

3 squares unsweetened chocolate
1½ cups sifted cake flour
1 teaspoon baking soda
1 teaspoon salt
¼ cup shortening
1 cup sugar
1 egg
1 cup milk
1 teaspoon vanilla

Line bottom of 8" x 8" x 2" pan with waxed paper. Melt chocolate. Combine flour, soda and salt.

Cream shortening and sugar until light and fluffy; add egg and blend thoroughly. Blend in chocolate. Add flour mixture alternately with milk and vanilla. Pour into pan. Bake at 350°F., 50 minutes, or until cake tests done. Cool 15 minutes, then remove from pan to finish cooling.

**Creamy French Icing**

2 tablespoons water
4½ tablespoons granulated sugar
2⅔ cups sifted confectioners' sugar
1 egg
½ cup shortening
1 teaspoon vanilla

Boil water and granulated sugar together a few minutes. Mix confectioners' sugar and egg. Blend with syrup. Add shortening and vanilla. Beat until

**Coal-Wood-Electric Baking with DIALED Heat**

"TWO RANGES IN ONE"—Bake with COAL-WOOD or OIL alone, ELECTRICITY alone, or in combination . . . one oven for any of these fuels.
No guess work . . . set the dial to desired temperature and electricity is automatically added to hold the heat set. Double cooking surfaces. Kitchens are COZY in winter—COOL in summer with America's finest and most beautiful MONARCH combination ranges. See your dealer today.

Monarch SINCE 1896

**MONARCH RANGE CO.**
7026 Lake Street
Beaver Dam, Wis.

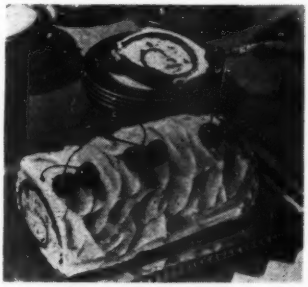
creamy. Add red vegetable coloring until the icing turns a pretty pink. Frost cake, place spice drops around edge, dribble chocolate from a home made wax paper cone, and dot with silver dragees.

The rail splitting of "Honest Abe" and hatchet and cherry tree tale of the father of our country—George Washington—are the basis for many patriotic desserts for their special days. There's no better way to celebrate both birthdays than with a log dessert!

**Mocha Log**

4 tablespoons flour
1 tablespoon instant coffee
3 tablespoons cocoa
½ teaspoon baking powder
4 eggs, separated
4 tablespoons sugar
1 teaspoon vanilla
2 pints ice cream
Whipped cream
Maraschino cherries, optional

Sift together flour, instant coffee, cocoa, and baking powder. Beat egg yolks until thick and lemon-colored. Beat in sugar and vanilla. Stir in dry ingredients. Beat egg whites until stiff but not dry. Fold egg whites into egg yolk mixture. Line a well-buttered baking pan (10½" x 15½" x 1") with waxed paper or aluminum foil. Pour in batter and



Mocha Ice Cream Log

bake in moderate oven (350°F.) 10 to 15 minutes or until top springs back when lightly touched with finger. Invert pan carefully on a clean piece of waxed paper. Without filling, gently roll warm cake jelly-roll-fashion. Cool. Unroll cake and spread with slightly softened ice cream. Roll again. Frost with sweetened whipped cream. Place in freezing compartment of refrigerator until ready to serve.

# New Styles For a New Season

The *Spring-Summer Fashion Book* is just out with fashions that have cosmopolitan styling to reflect your gracious, tasteful way of life.

You'll be delighted with a Directoire-styled bulky top suit that does wonderful things for your

figure, a double-breasted stole from Paris that tops a slender stalk of a sheath for new smartness.

Other high-fashion yet simple sewing "finds" include:

- Newly Orient-ated fashions
- Slim-line and flared dresses with their own jackets
- Styles that do the most for your figure
- Fashions that move from day to evening in classic good taste
- New fashion interest where you'd least expect it
- Separates in party-parts and daytime versions
- New resort and vacation sports translations
- Easy sewing summer confections
- Graduation dresses with dancing ways
- Children's wear with a French accent.

In short, scores of easy-to-make pattern designs. Send now for this book and plan to sew your wardrobe for the season ahead. Price just 25 cents. It may be secured from any of our branches as listed in the adjacent column.

## Two for the Money

**2098** Beautifully slimming costume story in two parts that is planned for your busiest days! Its briefer bolero lends youthful as well as sophisticated appeal. Sizes 12 to 46. Size 18: 5⅞ yds. 39-in.

**2249** Empire moulded princesse that makes the very least of your waist and then bells to a wide flare. You'll wear it for work or date with its own close-cropped jacket. Sizes 10 to 20. Size 16: 4 yds. 39-in.

Send THIRTY-FIVE CENTS (in coins) for EACH pattern to: ELECTRICITY ON THE FARM at branch nearest you:
Box 42, Old Chelsea Station, New York 11, N. Y.
652 Mission Street, San Francisco 5, California.
IN CANADA: Box 70, Place d'Armes, Montreal 1, Quebec.
Add FIVE CENTS for EACH pattern for first class mailing.
For SPRING-SUMMER FASHION BOOK, add TWENTY-FIVE CENTS.

for Junior Partners

# National 4-H Winners

### In Canning, Clothing, Food Preparation and Freezing

Last month we reported on 4-H winners in electrical projects at the 34th National 4-H Club Congress held in Chicago. This month we are privileged to bring you the 1955 National Winners for projects in the divisions of clothing, frozen foods, canning, and food preparation. For participation in these projects, electricity is used extensively in each and every one.

State winners in each division received an all-expense trip to the Club Congress. National winners in each division received $300 scholarships sponsored by the individual award donors for the particular division. The projects themselves are conducted by the Extension Services of State Agricultural Colleges and by the U. S. Department of Agriculture. The National Committee on Boys and Girls Club Work arranged the Club Congress and announced the National Winners.

### Canning Achievement

The girls who participated in this division are encouraged to develop their skills in the preservation of fruits, vegetables and meats, thus increasing a year round food supply by canning for the family. Stresses are also placed on the use of home grown produce to promote a well-balanced diet and reduce the cash expenditures for food by the family.

Kerr Glass Manufacturing Corporation awarded $300 scholarships to six national winners in this division. These winners were Ann Head, 17, Greensboro, Ga.; Ruth Ann Schuh, 18, Indianapolis, Ind.; Barbara Ann Scheibel, 20, New Ulm, Minn.; Margaret Mary Smith, 17, South River, N. J.; Pattie Sue Brasher, 17, Huntington, Utah; and Yvonne Hinton, 18, Linville, Va.

The girls in the Canning Achievement division have been very active during their 4-H careers as shown by the fact that they have averaged 3,120 quarts of food apiece which they have canned themselves. In addition, the girls have averaged 31 demonstrations where they have shown groups the techniques which they use. Some of the girls have even written news articles on canning technique.

### Clothing Achievement

The objectives of this 4-H Division Program are to encourage girls to acquire skills in selecting, constructing, and caring for wardrobes suitable for work, school and social events. The program also helps them to dress becomingly and healthfully in keeping with a well-planned family budget.

The awards donor for this division is Coats & Clark Inc. They

Canning achievement winners each received a $300 scholarship from the Kerr Glass Mfg. Corp. for their skills in the preservation of fruits, vegetables, and meats. They stressed the use of home grown produce for balanced diets. Winners, (l. to r.) are: Ann Head; Ruth Schuh; Margaret Smith; Pattie Brasher; Yvonne Hinton; and Barbara Scheibel.

Clothing achievement winners each received a $300 scholarship from Coats & Clark, Inc. Winners, standing (l. to r.) are: Amelia Frost; Joan Crawford; Elizabeth Minor; Carleine Shibles; Joyce Weaver; Betty Johnson; Margaret Estes; Linda Suckow; Katrina Agle. Kneeling: Cherie La Fromboise; Carolyn Weisgram and Gerry Johannes.

Giant silverware symbolizes the nearly 16,500,000 meals prepared by 4-H members in the food preparation program, largest division of the 4-H club program. National winners are, left to right: June Moore; Carol Helterline; Barbara Pivonka; Dawn Asay; Peggy Anne Hall; Darlene Liudahl; Margaret Ann King; and Barbara H. Sherman. Seated is C. T. Lawson of American Motors Corp. Its Kelvinator division awarded each winner with a $300 scholarship.

presented a $300 scholarship to each of the twelve national winners. The national winners were Amelia Frost, 18, Calera, Ala.; Carolyn Weisgram, 18, Tehama, Calif.; Elizabeth Minor, 18, Bristol, Conn.; Joyce Weaver, 17, Nampa, Idaho; Cherie La Fromboise, 16, Silver Lake, Kansas; Carleine D. Shibles, 18, Thorndike, Me.; Betty Jane Johnson, 17, Reno, Nev.; Katrina Agle, 18, Eden, N.Y.; Joan Crawford, 17, Hayesville, N. C.; Gerry Johannes, 19, Xenia, Ohio; Margaret Anne Estes, 18, Rochelle, Va.; and Linda Suckow, 18, Neilsville, Wisc.

All of these girls have made, remodeled or repaired literally hundreds of garments and articles ranging from pot holders to tailored suits for women and dress shirts for men. In addition, they have given demonstrations on sewing, fitting garments, using patterns and other techniques relative to selecting, constructing and caring for a wardrobe. Many of the girls have also helped plan and have participated in style revues at county and state fairs in connection with their 4-H projects.

"I'm givin' her one more chance. I put her closer to the light tonight."

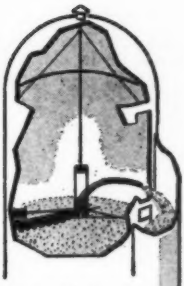
### Food Preparation

The food preparation division teaches girls how to plan, cook and serve meals. It also educates them as to the importance of eating nourishing foods for good health. Members in this division are urged to improve the eating habits of the entire family. An important stress is placed on the use of home produced vegetables, fruits, poultry and meats.

The Kelvinator Division, American Motors Corporation presented $300 scholarships to each of the 8 national winners. These winners were Dawn Asay, 16, Tulare, Calif.; Barbara Pivonka, 18, Timken, Kans.; Margaret Ann King, 17, Gaithersburg, Md.; Carol Helterline, 19, Plains, Mont.; Peggy Anne Hall, 17, Sylva, N. C.; Darlene Liudahl, 18, Maddock, N. Dak.; Barbara H. Sherman, 17, Centerdale, R. I.; and June Moore, 18, Cookeville, Tenn.

The Food Preparation Program had nearly 600,000 members in 1955 and was the largest

*Make silage come to you*



**with a Louden Silo Unloader**

Throw a switch and watch fluffy corn or grass silage pitched down instantly; finish feeding in 10 minutes—winter or summer—instead of the back-breaking task of climbing the silo, chopping and heaving silage.

Have better silage and cut hired man worries the year 'round with the low cost Louden "Master-Made" Silo Unloader. Cleans crusty, frozen silage off silo walls—saves hours of man-killing work. **Send the handy coupon for more information today!**

The Louden
MACHINERY COMPANY
382 West Court, Fairfield, Iowa • Branch: Albany, N. Y.
A Subsidiary of Mechanical Handling Systems, Inc.

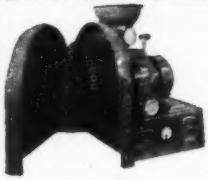
**Send me full information on the Louden "Master-Made" Silo Unloader.**

Name_____
Route, Box No. _____
City _____
State _____

HAVE FRESH GROUND FEED DAILY

**Viking**
ELECTRIC AUTOMATIC
HAMMER MILL

*Save* WORK—TIME—MONEY



*Write For Free Literature*

DEALER INQUIRIES INVITED

**HORVICK MFG. CO.**
MOORHEAD, MINN.

**CUT FEED COSTS!**

ELECTRIC MIX-MILL

Patent Applied for.

MEASURE, MIX and GRIND your FEED—AUTOMATICALLY with a SINGLE UNIT—

Write Today for Literature
*Dealer Inquiries Invited*

**BELLE CITY ENGINEERING CO.**
Dept. E. 921 Carroll St., Racine, Wis.

**DRAINS** Cellars, Cisterns, Wash Tubs;
IRRIGATES—CIRCULATES—SPRAYS
Pumps 3000 GPH; 450 GPH 80' high or 1800 GPH from 25' well. Use 1/6 to ¾ HP motor. Coupling included free. Does not rust or clog! Postpaid if cash with order. (West of Miss. add 50c)
*MONEY BACK GUARANTEE*
LABAWCO PUMPS $6.95
Belle Mead 49A, N. J.

**BUSH'S CHICK SALE**
Leghorns, Austrawhites, Minorcas, $8.99; pullets $17.99; Rocks, Reds, Wyandottes, Hamps $8.99; pullets $13.99; Heavies $6.99; Mixed $5.99; Leftovers $4.99; Surplus $3.99; fob; catalog, 26 breeds, bloodtested.
BUSH HATCHERIES, 12, CLINTON, MISSOURI

**Free**
**NEW 12-Page Booklet**

**Tells over 20 WAYS to Save TIME, WORK and MONEY on the farm**

Crammed with useful information needed by farmers everywhere. See for yourself how modern, electric time controls can be used to end needless chores . . . increase equipment life . . . help you earn more money from your farm operations.

MAIL THIS COUPON TODAY . . . and start planning now to earn GREATER profits . . . with LESS work. © 1953

PARAGON ELECTRIC COMPANY
1654 12th St., Two Rivers, Wis.
Please rush your new booklet "How Time Controls Save Work . . . Time and Money on the Farm."
Name.....
Address.....
City..... RR.....

World's Largest Exclusive Manufacturer of Time Controls

Frozen food achievement winners each received a $300 scholarship from International Harvester Co. This year, a boy was selected as one of the winners for the first time. Winners, from left, are: Della Borchardt; Carol Christie; Thomas Leuthner; Ruthellen Walker; Jane Ruffin; and Noreta Schaefer.

division among the 4-H activities. Some 16,500,000 meals were prepared during the year in competition for county, state and national awards. The girls winning national honors in this program prepared hundreds of meals and thousands of special dishes during their 4-H work. They also made numerous demonstrations and exhibits of food preparation at various gatherings. They are all experts on nutrition, well balanced family meals and budgets as far as meal preparation is concerned. Some of the girls even demonstrated how to dress attractively while cooking.

### Frozen Foods

The girls working in this division learn to use freezing equipment efficiently and thus provide the farm family with an ample supply of home grown food. It also develops skill in preparing, packaging and freezing all meats, eggs, fruits and vegetables.

International Harvester Company presented $300 scholarships to the following national winners: Carol Christie, 17, Monrovia, Calif.; Noreta Schaefer, 18, Conklin, Michigan; Thomas Leuthner, 17, St. Bonifacius, Minn.; Ruthellen Walker, 17, Hammonton, N. J.; Della Borchardt, 20, Orange Grove, Texas; and Jane Ruffin, 17, Tunstall, Va.

These six national winners have frozen hundreds of pounds of vegetables, fruits, fryers and various cuts of meat during their years in 4-H work. One winner piled up a total of 5,493 pounds of frozen food in an 8 year period. In addition to this they have all held demonstrations of freezing techniques at county and state fairs and other gatherings. They are all well qualified to give expert advice on the proper techniques for selecting fruits and vegetables at the proper maturity age and for processing these products in the correct manner to bring out the utmost flavor and quality.

## Are You Water Conscious?

"We find it hard to believe that the average use of water per person in the United States is around 1,300 gallons per day—more than five tons. It takes roughly 3000 gallons of water to grow a pound of cotton—about 40 gallons of water to grow the feed to produce the egg—1800 gallons of water to grow the grain to make a pound of beef.

Every year we start about 100 million acre-feet of water toward fields for irrigation. Only one-fourth of it gets there to do the job. Three fourths are lost. If just one-third of this loss could be prevented—in other words, if 50 million acre-feet, instead of 25 million were saved—the value of the saving would be about $50 million a year, and the amount of water actually irrigating would be doubled." *Ezra Benson, Sec'y of Agriculture.*

EVERSTOPTOTHINK? — A GENIUS is a fellow who can re-wrap a new shirt and finish up with NO pins left over . . . . DEEP FREEZING being what it is, a new bride can NOW set her hubby down to the best meal he ever THAW . . . . KNIGHT: a one-man tank in the middle ages . . . . SNICKERSCOOP-OF-THE-MONTH: A little old lady and her grandson were taking a train trip and grandma had just dozed off for a short nap. As the train was pulling into a station the old lady woke with a start and asked her grandson, "What station did the conductor call?" "He didn't call ANY station," replied the little boy, "he JUST put his head in the door and SNEEZED." "QUICK," cried grandma, "grab your packages. We get off here at OSHKOSH." . . . . HEN-PECKED HUBBY: One who asserts himself by DEMANDING a clean apron . . . . On receiving a complaint that the monkeys in his zoo were playing cards and gambling the keeper refused to be disturbed. "After all," said he, "they're only playing for peanuts."....SODDEN THOUGHTS: SOME people bring happiness WHEREVER they go—OTHERS bring happiness WHENEVER they go . . . . No matter HOW modern the kitchen, it STILL needs that old fashioned touch—a COOK . . . . From the AUBURN PLAINSMAN: "Hello, my JAGUAR just hit a PIG and turned TURTLE." "Well, don't call US. THIS is a GARAGE—call the ZOO." . . . . No one bores you to tears like a DENTIST . . . . SNICKERSNORT-OF-THE-MONTH: A man wishing to buy a farm inspected one place and announced that he DIDN'T like it. "The HOUSE overlooks every acre of it," he complained. "There isn't a spot where a fellow could get out of sight of his wife." (Quote) . . . . I.O.U.: a PAPER WAIT . . . . One thing a divorce lawyer learns in college is how to SQUARE a TRIANGLE . . . . MARY: "I don't see John NEARLY as much as I used to." CARRIE: "You should have married him when you had the chance." MARY: "I DID!" . . . . PARTING THOUGHT: a CHIMNEY SWEEP is a fellow who does things to SOOT himself . . . . Your pun-peddler—DUFFY.

## Helpful Hints for Heat Lamps

The 250 watt R40 bulb is the most commonly used infrared heat lamp used on farms. It comes in two types of glass. These are ordinary white or soft glass and hard or Pyrex glass. Because they are cheaper, many farmers buy the regular or soft glass bulb which breaks more easily. Breakage of these soft glass lamps can be caused by a sow's nose, a wet glove, water dripping from a roof, or chicken droppings. Precautions, as follows, should be taken to protect them from breakage as well as to assure most satisfactory service:

1. Hang lamps by a light chain or wire so that they cannot fall.
2. Protect bulbs with deep reflectors so that they cannot come in contact with water or other materials which might break them.
3. Suspend lamps at a height where livestock being brooded cannot reach them.
4. Use porcelain sockets or lamp holders rather than those made of brass.
5. Use rubber covered cords to connect brooder lamps and tape any excess cord up out of the reach of livestock.
6. Connect no more than six 250 watt bulbs on a 15 ampere circuit.

---

An egg contains approximately 75 percent water. The egg shell contains 6,000 to 8,000 pores which permit rapid evaporation of moisture when room temperature is high and humidity is low.

VOGEL
PATENTED
FROST-PROOF HYDRANT

- Will never freeze when properly installed.
- Provides running water even in coldest weather.
- Assures Positive Fire protection.
- Vogel Hydrants meet code requirements.

*The handle in this position shows at a glance that the water is positively shut off and is your guarantee against freezing and leakage.*

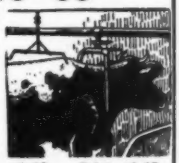
For information, see your nearest Plumbing Supply House—or if you write us direct, state the county in which you are located.

JOSEPH A. VOGEL CO. WILMINGTON 99 DELAWARE

KLEEN-STALL COW TRAINER
TRAINS YOUR COWS TO BACK UP WHEN THEY HAVE TO "GO"

- Saves bedding and hours of your time
- Keeps stalls and animals clean
- Quick—Easy to install
- Operates on electric fence controller.

Money Back Guarantee
Veterinarian Approved



Pckg. of 5 $10.60 | Pckg. of 10 $19.50 | Pckg. of 15 $28.40

WE PAY THE POSTAGE
RICHARDSON ELECTRIC
Monroe, Wisc. Dept. E

ELECTRO-LINE FENCING
Doesn't "Cost" . . . IT PAYS!
Electric fencing will help you get the most from your land.
Electro-Line controllers will help you get the most from your fence!
A Controller for Every Fencing Job.
ELECTRO-LINE PRODUCTS CORP.
Soukville, Wisconsin

# Sheep Shearing Champs

The eight finalists in order of their finish with E. A. Warner (left) of Sunbeam were Nick Luhman, Goodhue, Minn.; Paul Burris, Uniontown, Ind.; Roy Mabe, Laurel Springs, N. C.; Frank Woolam, Macomb, Ill.; Cal McCutcheon, Reedy, W. Va.; Stan Poe, Franklin, Ind.; Emmett Atwood, Whitehead, N. C.; and Richard Dungan, Brantford, N. Dak. Henry Mayo, right, supervised the contest.

Nick Luhman, 19 year old 4-H'er from Goodhue, Minnesota, won the 1955 National 4-H Sheep Shearing contest at the National Livestock Exposition held at the Union Stockyards, Chicago, in December. The new champion won over the 19 state champions and runners-up who were competing for college scholarships and U. S. Savings Bonds donated by Sunbeam Corporation, sponsor of the contest.

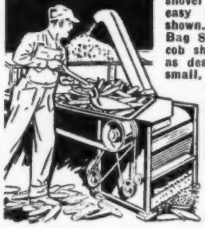
Nick's speed, technique and quality of workmanship gave him top honors with a score of 94.4 out of a possible 100. Finishing second with 94.2 was Paul Burris, 19, of Uniontown, Indiana, who had won the Indiana state shearing title. Roy Lee Mabe, 18, Laurel Springs, North Carolina, was third with a score of 93.9. "I'm the happiest 4-H'er today", said the new champion. "This $300 scholarship gives me an opportunity to go to college which, up to this time, I had not planned on doing."

Nick Luhman attributed his ability and speed to the fact he had sheared 2000 head of sheep this spring; and also stated that some days he sheared over 80, which is very good for a youth of his age. Nick lives with his mother and father on a 160 acre farm near Goodhue, Minn.

Luhman won a $300 scholarship with his speed and technique.


**SHELL CORN THIS FAST EASY WAY**

135 TO 180 BU. PER HOUR



You've never seen anything to beat BELL'S NEW LOW-COST BALL-BEARING SHELLER. Shells corn about as fast as you can shovel it into the low-built easy feeding hopper, as shown. Equipped with 2-Bag Sacker, wagon loader, cob shaker or cob elevator as desired. Feed large or small, hard or soft ears. Pays for itself in time and labor saved. Electric motor, gasoline engine or tractor power. Write today for illustrated Folder and dealer's name.

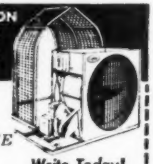
THE C. S. BELL CO.
Manufacturers
Dept. E.
HILLSBORO, OHIO

**"CAPON"**

NEW EASY FAST WAY. 8 to 12 pound permanent Capons from 2 to 8 week old roosters. Net $1.00 to $2.00 each. Do it yourself. For beginners or Capon experts. No over production past 50 years. Profitable year around. Caponizing equipment — Electric and non-electric. Electric Dubbing. Debeakers. Write for free illustrated bulletin.
HOWARD BEUOY, Cedar Vale 16, Kans., USA

4 EXTRA CHICKS, $2.99 100. BLOODTESTED AAAA, our choice. No Culls, Crippies. 30 breeds including Rocks, Reds, Wyandottes, Hampshires, Minoreas, Leghorns, Austrawhites, $8.99; Pullets, $13.99; Heavies, $6.99; Mixed, $5.99; Fryers, $4.99; Surplus, $3.99; Leftovers, $2.99. FOB. Catalog. Clinton Chick Store, Clinton, Mo.

CLAY FREE INFORMATION MANUAL
**Crop Drier**



CLAY EQUIP. CORP.
264 Pearl St.
Cedar Falls, Iowa
*Please send me your FREE "Crop Drying Manual"*
*Write Today!*
NAME_____
ADDRESS_____


# Portable Bench Saw

H. W. Sorrick of Morrow County in Ohio mounted his home built saw on a trailer chassis for utmost portability. Now, he can move the saw around to different buildings.

Sorrick's portable saw is powered by a 1½ hp, 1750 rpm electric motor. Both motor and saw shaft pulley use a 5 in. diameter "V" sheave for the V-belt drive. The saw blade is 15 inches in diameter. The saw table, made of wood, is 40 in. by 60 in. and is complete with locking guides for ripping boards.

Sorrick has found the unit very efficient for making fence boards, gates, corn cribs and doing other heavy sawing jobs.

# Questions and Answers

### DO YOU HAVE A QUESTION?

If you have any question on the use of electricity that is bothering you, send it to Reader Service Department, ELECTRICITY ON THE FARM Magazine, 305 East 45th Street, New York 17, N. Y. All questions will be answered by return mail. Some answers will also be published in this section of the magazine.

### Grounding Wire on Portable Drill

▶**Question:** *I have a portable electric drill with a protruding green ground wire on the extension cord. How should this be used?* C.E.K., Ohio

▶**Answer:** If your wiring is done with conduit or metallic covered cable, or if a third bare ground wire is used to form continuity to ground in the wiring, this green ground wire can be fastened to the screw that holds the cover to the box. If ordinary two wire, non-metallic cable is used in your wiring, a jumper circuit to ground must be made in the box to complete the grounding circuit from the box cover screw. The green ground wire can also be clamped to a grounding electrode, a water pipe, or any other good ground.

### Heating Cable for Eave Gutters and Downspouts

▶**Question:** *Can heating cables or tapes be used successfully to keep eave troughs free of ice?* W.H.S., Penna.

▶**Answer:** Yes, heating cables and tapes are used quite extensively for this purpose. It is done by laying or hanging a double length of heating cable in the gutter or downspout to maintain a water channel through the ice. Quite often heating cable is also used to keep an ice ledge from forming at the edge of the roof where the eaves overhang the side walls of the house as this area is colder than the rest of the roof. To accomplish this, soil heating cable is applied in a zigzag fashion to a two foot area at the lower edge of the roof. When this is done, if the eave gutters are not kept open with a separate cable, the zigzagged cable on the eaves should extend one or two inches past the outside edge of the gutter to allow the water to drip past the clogged gutter.

Ordinarily, thermostats are not used with these installations. Rather, the cable is plugged into a weatherproof convenience outlet—preferably located under the eaves. This outlet is controlled by a combination switch and pilot light and is turned on or off manually as needed. During off-season months or when workmen are on the roof, the heating cable should be unplugged at the weatherproof outlet. It is also advisable to fuse this circuit separately.

### Recognizing Skimpy Wiring

▶**Question:** *How can I determine whether or not my wiring is good or poor?* A.V.B., Maryland

▶**Answer:** There are several situations or conditions that indicate wiring condition. The first and most obvious, of course, is the physical condition of the wiring system itself. When metal boxes, switches, and cable coverings become badly corroded and rusted, or when non-metallic insulation becomes frayed and starts to peel off, the wiring system is definitely in need of attention.

The second indication to look for is performance of electrical equipment. The physical condition of the wiring may be perfect, but if it is too skimpy or small for the load being placed on it, it is still *poor* wiring. If you notice that lights dim when motors or major appliances are plugged in or when the refrigerator, furnace blower, water pump, milking machine, or hand iron operate, it is a pretty sure sign that either the wire size is too small or that too much equipment is connected to a particular branch circuit. Appliances do not operate at their maximum efficiency, rated speed, or full heat unless they are supplied with the proper amount of electricity.

Fuse trouble is also an indication of poor wiring in the form


Strataflo

FOOT AND CHECK VALVES

ORDER FROM YOUR JOBBER

Improve your water supply... save that well... with a Strataflo Foot Valve. End leakage troubles, save wear and tear on pump. It will save its cost in service calls it eliminates. Ideal for jet-type pumps.

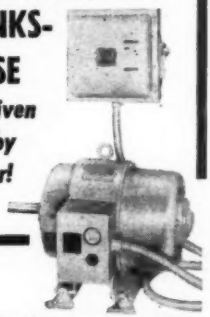
*Write for Bulletin 902.*

STRATAFLO PRODUCTS, INC.
FORT WAYNE 1, INDIANA

*Electrified farms need a*

FAIRBANKS-MORSE

*tractor-driven stand-by generator!*



Ever think of what would happen should the high line fail?

Why take a chance? Get a Fairbanks-Morse tractor-driven generator! Comes in 3,000- and 5,000-watt capacities. 115 or 115-230 volts, AC current. See your Fairbanks-Morse dealer, or write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE

*a name worth remembering when you want the best*

of overloaded circuits. Circuits wired with #12 wire are designed to carry a 20 ampere load and should be fused with 20 ampere fuses. Circuits of #14 wire are designed for only 15 amperes and should have 15 ampere fuses. Loads in excess of these will cause heating of the copper conductor which in turn breaks down the insulation. The fuse for a wiring circuit is comparable to a safety valve for a steam boiler. When a valve with too high a pressure rating is used on a boiler, it affords no protection for the boiler. Likewise, when a fuse too large for the circuit's wire is used, it affords no protection for the wire. If fuses of proper size for a particular circuit continue to "blow" due to too much load on the circuit, larger fuses should *never* be used as a solution. This only creates a fire hazard. The proper procedure is the addition of more circuits to handle the load being carried.

### 6 Volt Charger on 12 Volt Battery

▶**Question:** *I have a battery charger for use on 6 volt batteries. Now I am using 12 volt batteries. Can my 6 volt generator be converted to charge 12 volt batteries?*

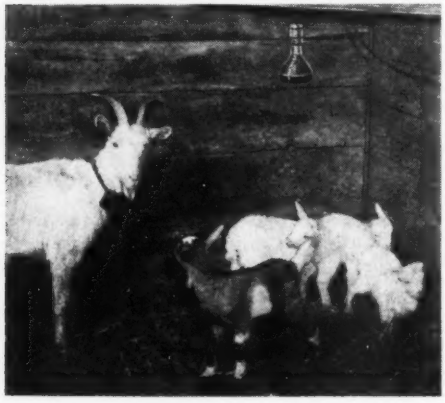
R.L.F., Massachusetts

▶**Answer:** Unfortunately, there is no way that you can convert your 6 volt battery charger to a 12 volt charger. The basic design of your generator is for 6 volts. It would be possible for you to use the unit to charge a 12 volt battery by hooking the charger in parallel across the two 6 volt sections of the battery. This would, in effect, be the same as if you were charging two 6 volt batteries. It does, of course, cut the amperage delivered to each part of the battery in half and is rather a makeshift way of doing it but should do the job, in event you do not feel that a new generator is justified.

# Heat Lamps Save Kids

The Simpson brothers of Bloomington, Indiana raise goats as an aid to their farming operation. It seems that goats keep lice off of their livestock, help keep weeds under control, and keep dogs away from the sheep. Furthermore, goat's milk puts fast gains on hogs.

The Simpsons keep as many as 15 goats on their farm. The kids are born in early spring when the temperatures are sometimes very low. In cold weather the nanny goat is moved to a maternity stall and as soon as the kids are born a 250 watt infrared heat lamp is hung in the corner. The kids soon find the heat and enjoy it as much as it if were sunshine. Jim Simpson says, "We use infrared heat lamps to brood both sheep and goats. Although kids can stand more cold than lambs, it is impossible to save a large percentage of kids in cold weather without infrared heat lamps."



The kids are kept under the infrared heat lamps for 3 to 4 days, depending on the strength of the kid and weather conditions. This gets them off to a safe, healthy start. Simpson believes that by the use of infrared heat lamps they have been able to save many a weak kid.

## Awards for November Rhyme Contest

***Though a broom is much cheaper,***
***It can't clean like a vac sweeper.***
***It still leaves the dust—***
***Scrubbing floors is a must.***

### The Winning Last Lines

#### FIRST PRIZE—$25 CASH

*"A vac is the perfect dust reaper!"*

Mrs. Chester L. Franzen
Green Valley Ranch
Goodrich, North Dakota

#### SECOND PRIZE—$10 CASH

*"But a vac is the family's health keeper."*

Russell Abert
R.F.D. 2, Box 30
New Douglas, Illinois

#### Five Consolation Prizes $3 Each

*"Electricity won't let dirt defeat her."*

Mrs. Aaron Kanagy
Reedsville, Pa.

*"In time and in work the cost's steeper."*

Marietta S. Perkins
Route 1
Jerome, Idaho

*"Lectric vac, is a back saving keeper."*

Ernest Jadin
R.F.D. #1
Brussels, Wisconsin

*"Lectric vac, like a lady, will keep 'er."*

Mrs. William Richards
Toughkenamon, Pa.

*"Leaving Mom just a dust-laden weeper."*

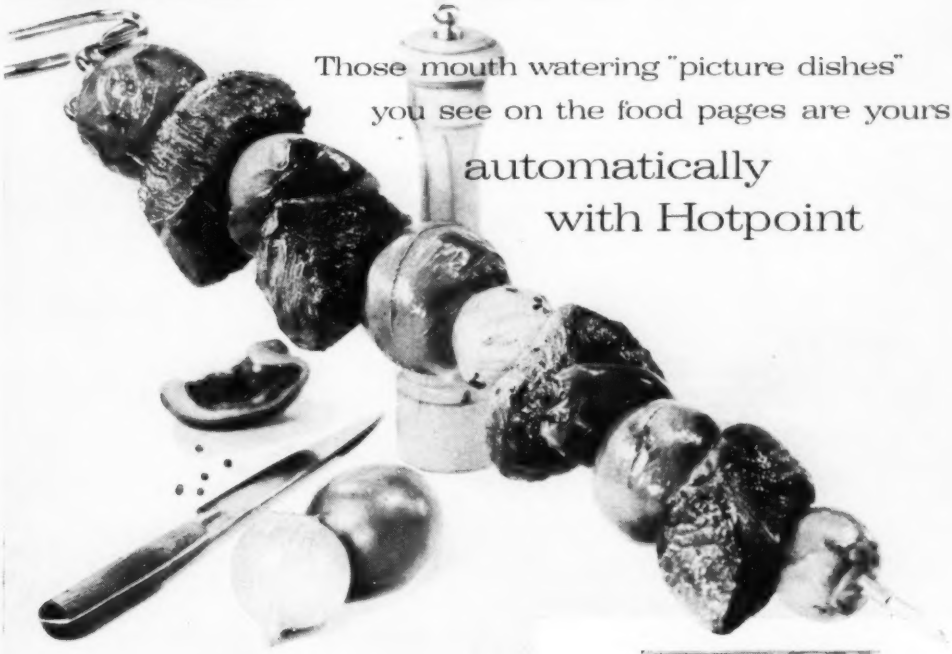
Miss Bess Russell Carlson
R.F.D. 2
Mayville, New York

#### Honorable Mention

Mrs. Clarence Anderson, Hawley, Minn.; Arthur L. Booth, Unityville, Pa.; Mrs. Selmer Braaten, Mayville, North Dakota; M. E. Burt, Willimantic, Conn.; Mrs. James N. Denny, New Lexington, Ohio; Oliver Endsley, West Branch, Iowa; Lewis C. Harrison, Walhalla, South Carolina; Mrs. Dolly R. Hunt, Guthrie, Okla.; Mrs. Ronald L. Lowe, Filer, Idaho; Mrs. Otis Post, Independence, Kansas; Mrs. Nellie Powers, Mauston, Wisc.; Mrs. Jannie Routley, Cass Lake, Minn.; Dale Rowe, Oconomowoc, Wisc.; Fred Smolder, Quick, W. Va.; Mrs. Theo. Wetzel, Sherwood, Oregon; and Mrs. Henry Zeitz, Boon, Michigan.

Those mouth watering "picture dishes"
you see on the food pages are yours

automatically
with Hotpoint



(Get this exciting Shishkebob recipe at your Hotpoint dealer's.)

*Here's the only range that lets*
*you cook food every way it can be cooked*
*– as fast as it can be cooked –*
*and does it all automatically!*

For the first time, *and only with Hotpoint,* do you get *fully automatic* top-of-the-range and deep-well cooking . . . even deep-fat frying! Hotpoint's Super-Matic Controls assure you of perfect cooking *temperatures* for any recipe–thermostatically regulated for absolute accuracy–plus proper clock-controlled cooking *times.* What's more, the new "Super 2600" Calrod® surface unit cooks *faster than gas!*

Of course the Super-Ovens are automatic, too. Barbecue the self-basting Rota-Grill way, or in the Handi-Over rack. Roast, broil, bake at the same time – in one or two ovens. Nothing burns. Nothing dries out. It's all *automatic.* See your Hotpoint Dealer! (Choice of 5 new Colortones or classic white.)

**New Hotpoint super deluxe** electric range has color-lighted push-buttons, Super-Matic controls, two automatic ovens, Rota-Grill, Handi-Raise Broiler, Handi-Over Grill.

**Meat or fowl roasted** exactly the way you want it! New Roast-Right thermometer with range-top scale tells when meat is cooked to your taste.

**Take it to the table!** Custom Cooker and Server is an automatic fry-pan, too. Use it for any top-range cooking . . . use it as a beautiful server.

*Every day's a holiday with*

# Hotpoint

Ranges • Refrigerators • Automatic Washers
Clothes Dryers • Customline • Dishwashers • Disposalls®
Water Heaters • Food Freezers • Air Conditioners

Hotpoint Co. (A Division of General Electric Company), Chicago 44

Mr. H.N. Young,
Director, Agric. Exp. Sta.,
Polytechnic Institute,
Blacksburg, Va.

Floyd Lee and son Donald, of Libertyville, Mo., inspect their electrically heated waterer which takes care of 25-30 cows for only 3 cents a day. Warming the water prevents freezing and makes it more palatable so that cows drink more. This can increase milk output an estimated 25% during winter months.

# Plenty of electricity increases profits, saves time and effort

In more than 300 ways, electricity on the modern farm is increasing production, building profits and making hard jobs easier. Illustrated is just one farm application of low-price electric power: an electric stock waterer that assures dairy cows, beef cattle and hogs plenty of water in winter. Result: higher production, added income during the winter season.

America's farmers will need, in the next six years, twice as much electricity as they're using now—to save more time and effort, make farm life more attractive.

Where is this added electric power coming from? From the more than 400 independent electric light and power companies and the local farm electric groups that together are bringing abundant electricity to 96% of America's farmers. They're planning and building well ahead so there will be plenty of electricity—always.

***While the price of everything else has gone up, up, up, Niagara Mohawk electricity remains one of the biggest bargains you can buy.***

205

NIAGARA MOHAWK POWER CORPORATION

NIAGARA MOHAWK